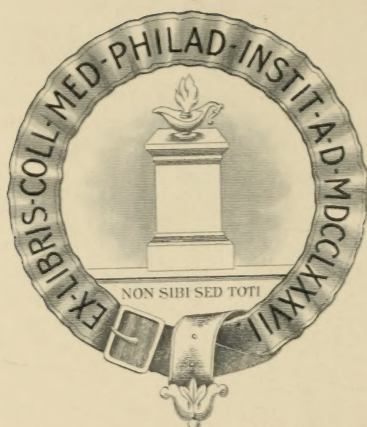




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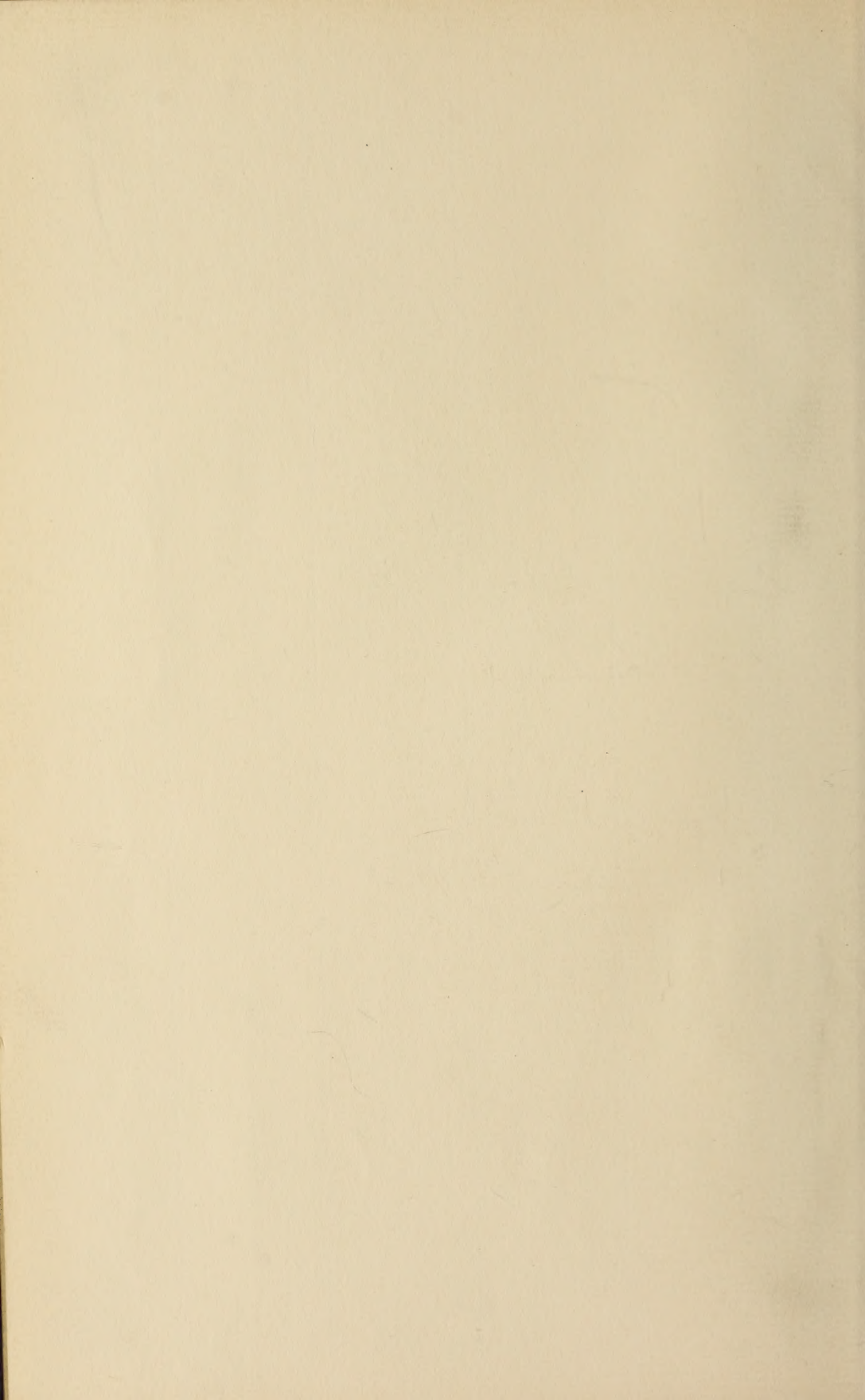
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THE HAHNEMANNIAN MONTHLY.

JANUARY, 1915

THE ANNUAL ADDRESS OF THE PRESIDENT OF THE HOMŒOPATHIC
MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA AT GALEN
HALL, WERNERSVILLE, PA., SEPTEMBER 24, 25, 26, 1914.

BY

LEON T. ASHCRAFT, M. D., PHILADELPHIA.

*Fellow Members of the Homœopathic Medical Society of the
State of Pennsylvania and Distinguished Guests:*

The Annual Address of the president of the State Medical Society has usually been a review of those things which pertain to the physical welfare of the community. This is as it should be. Nevertheless, other things of importance require some reference. While it is our duty, when possible, to prevent illness, and, when confronted with it, to eradicate it quickly, yet cures are often prevented by economic and social conditions. Therefore, to overcome these obstacles, a physician must equip himself to fulfil literally the meaning of the word "doctor." He must be a teacher as well as a practitioner.

The laity, fortunately, are being educated in preventive medicine, and taught to bestow more care upon their physical condition. This is accomplished through the medium of the public press and by popular clinics. One cannot read the daily papers without seeing rules for avoiding illness, and references to the causes, prevention and treatment of almost every known disease. Cancer, tuberculosis, typhoid inoculation, and the technic of operations are discussed as freely as any other topics.

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The people of this State are particularly fortunate in receiving instructions in matters relating to their health. Our very efficient Health Department, ably conducted by Dr. Samuel G. Dixon, has done much for their physical welfare. The people of Philadelphia, too, are especially favored, the Department of Public Health being very efficient; and Dr. Harte is to be praised for his earnest efforts, as is also Dr. Fairfax Irwin, for his endeavors to rid the city of rats, thereby preventing an invasion of bubonic plague and leprosy.

Certain hospitals in Philadelphia must be mentioned because of their educational work, especially the Children's Homœopathic Hospital. Their public clinics and lectures to mothers have done much to educate those who most need it. If we could have the medical news of the day censored, many popular misconceptions might be dispelled. In this connection my thoughts recur to the craze concerning radium as a cure for all forms of cancer. The zeal with which some experimenters hurried to announce their results from the use of this metal was untimely. Radium, of course, has its place; but just what that is, is far from being definitely determined. Another popular misbelief is that this is the day of drugless healing; that diseases are dissipated by the medicinal force of nature, are self-limited, or are cured by manipulation. As the result, the laity attempt to be cured either through the medium of prayer (this is said in a most respectful sense) or by means of osteopathy, neuropathy, chiro-practic or some such other method.

What, however, are we to expect of the laity, when some physicians say of pneumonia that it is a self-limited disease, uninfluenced by medicine? How wrong they are, we, as homœopaths, know. The value of the law of similars is daily being more and more recognized. The *Pacific Coast Journal of Homœopathy* states that Prof. Richard C. Cabot, of the Harvard Medical School, concedes that the use of tuberculin in tuberculosis is homœopathic; that bacterial vaccines are homœopathic in principle; that the small dose of these is homœopathic; that radio-therapeutics is a striking example of the homœopathic principle; that the approach to the single remedy is homœopathic; and that the regular physicians are wrong in not experimenting with homœopathic remedies. Prof. von Behring, of antitoxin fame, admits that the word "homœopathy" expresses best the ideas of immunity and vaccine treatment. Prof. Huchard, of *l'Ecole de Medicine*, Paris, is also convinced that

homœopathy has many truths, both in application and in dosage. Prof. Gimeno, of the Medical Faculty of the University of Madrid, likewise agrees with us that Hahnemann's law of similars is scientific and sound. These concessions, coming from those high in authority in the Old School, should induce every physician of that School to lay aside prejudice, acquired or inherited, and look into Homœopathy, which can be best done by studying the publications of the Homœopathic School. Some of our men are prolific and forceful writers. Why do not others follow their example? Such work redounds not only to one's individual credit, but also to that of our School.

This address would be incomplete, were it not to contain some reference to the sociological topics of the day. The most important of these is the attitude of the community toward venereal disease. The people view this subject as a moral question. They discuss very freely tuberculosis, cancer, and mental deficiency, as well as all degrees of crime; they work themselves into a frenzy over eugenics; but they shrug their shoulders at the mention of venereal disease. This is wrong. The venereal peril is a social and economic problem, and should be taken care of as such. While these diseases rarely kill, they do maim. Gonorrhea is responsible for most cases of infantile blindness, and frequently unsexes men and women; and, consequently, it is responsible for a lowered birth rate. Syphilis causes, among other things, mental degeneracy, and is transmitted to the offspring. Many of our insane patients have a syphilitic history. All of the venereal diseases are curable, and, in the light of modern science, quickly—more so than tuberculosis and cancer; and yet we build hospitals for the treatment of these diseases, ignoring the venereal patient. I repeat that both charity and the economic conditions demand the establishment of hospitals where these patients may be treated. Were I a member of the Legislature, I should vote against making an appropriation to any hospital refusing them admission and treatment. Inasmuch as these diseases menace society, they should be, as are other dangerous diseases, reported. The control of the social evil is the largest problem of the day. It has been claimed that some cities, through their Vice Commissions, have almost solved it. Perhaps they have.

Concerning alcohol, it has been definitely proved that, except in rare instances, it has neither medicinal nor nutritive value. Of its evils, one could write volumes. The world is rising in its

might and strength against the use of alcoholic beverages. When 67% of the arrests in this State are directly traced to this cause; when an inebriate hospital is being built because of it; when mental, physical and moral degeneracy and ruin result from it—it is time to legislate against the use of this drug. Its accessibility renders it doubly dangerous. Prohibition might remove this danger. Fortunately, through active legislation and hearty co-operation from druggists, the cocaine and other drug habits are being held in check. Physicians now, more than ever, hesitate to prescribe these drugs, even in minute quantities, recognizing the great liability of some persons to become drug habitues.

Concerning eugenics, I would state that some of our learned ones have worked faithfully over this subject. They have pushed aside the unfit, and mated only those physically sound. We cannot all, however, be physically and mentally perfect. Besides, all the eugenics in the world will not prevent those who love each other from marrying. But let us not devote too much time to those topics, which, despite the highest endeavors will eventually be solved by the immutable laws of human nature. There have been much discussion of problems, sex talks and sex plays. We have had too much of these. Such things should be taught our children, if deemed advisable, by their parents; or, in some instances, by properly qualified instructors.

As humanitarians, our attitude towards the subject of child-labor should be unmistakably plain. It should be the sense of the community that they endorse the principles of the Palmer-Owen Child Labor Bill, now pending before Congress, which, in brief, asks the Federal powers to prohibit children under sixteen years of age from working more than eight hours a day, at night, or at hazardous and dangerous occupations; and moreover, to demand sanitary conditions under which they may follow their several occupations.

The president of our Society should always be one who is in touch with the medical affairs of the day; one who will visit every local society throughout the State at least once during his term of office; one who will, in short, devote, as is his duty, a large portion of the year's time to the interest of this Association. This means self-sacrifice. Since being elected to the office of President, it has been my pleasant duty to visit many of these local societies. It affords me pleasure to thank personally Dean Pierson and Drs. Palen, Speakman, Edwin James,

Barker, Williams, Eberhard and others for their able support. The observations made by me during these visits may be of interest:

Generally speaking, our School throughout the State is in a healthy condition, its interests being well protected by Dr. Tuller and an efficient Legislative Committee. Especially is this true of our Philadelphia County Medical Society. The men of Philadelphia and its vicinity are very active. The same may be said of Pittsburg, Altoona, Harrisburg, Lancaster, Scranton, Wilkes-Barre, Easton, Allentown, Pottsville and Reading societies.

The meeting at Pittsburg was an especially interesting one. Scranton-Wilkes-Barre, and Pottsville-Reading, have vied with each other in enthusiasm. Both have formed Alumni Branches of the Hahnemann College. Particular mention should be made of the zeal with which the men in Altoona and vicinity have conducted their meetings. It was not uncommon to find members of the Old School in attendance. On the other hand, however, we found marked indifference existing in several localities. In some, but very few members were in attendance at the meetings; and some of the medical societies throughout the State are practically defunct. In other instances our men are joining the Old School medical societies. There are certain localities that have no homœopathic practitioners. In order to overcome this, let us have an active Publicity Bureau, employing a man to advertise Homœopathy throughout the State. Let him visit every local society and reorganize it, if necessary, organize others where possible, and deliver public lectures on our system of medicine. It is quite possible that a man employed by the Graduate Medical Council of Hahnemann College could attend to this work as well. Why not have this Society vote a certain sum towards this man's salary? We must indeed be increasingly active, if we want to hold our position as a distinct School of Medicine.

There is no question but that the State Society needs readjustment. It is far from being properly organized. It is active only once a year, for three days. Its entire business consists, at present, in holding the annual meeting. Could we not have two scientific meetings yearly? It might inject new life into our organization. We find it working under the same regime as it did when first organized. It is not attending properly to its business, that of advertising Homœopathy. Our Old School

colleagues, however, have not been sleeping; because we find that radical changes have occurred in their basic organization, changes that have become necessary to meet altering conditions. Certain corrections have been deemed wise, after most thorough and earnest consideration, in order to increase efficiency and further their interests. These men have recognized the fact that the harmonious organized work of all, means benefit to each.

Our prestige as physicians depends largely upon the standing of our societies and institutions. The greater and more progressive they are, the greater is our individual reputation. If we wish to further the standing of Our School, we must work in a harmonious, organized way. We must interest ourselves in all of our organizations. We must see that these are efficient and properly fitted to carry on our business.

The first change that this State Society should make is to create a House of Delegates. At present its management is intrusted to a Board of Trustees, whose meetings are required to be held in Philadelphia. During the past three or four years the trustees have very often been men whose residences were far removed from Philadelphia. Naturally, it has frequently been almost impossible to procure a quorum for a trustees' meeting. Hence, the necessity for a House of Delegates, consisting of members elected from the various county societies; each county society having one or more representatives, depending upon the number of its members. The entire business of this Society, could be taken up and transacted by this House of Delegates, reports being made at the annual meetings, thus allowing the general sessions of the Society to be devoted to scientific discussions only. Furthermore, this body should be active throughout the entire year, hold frequent meetings and be acutely alive to everything of medical interest. It should act in conjunction with the Board of Trustees. The men elected to the House of Delegates should also be on the Membership Committee.

The question of membership and members' dues merits attention. Nearly five hundred homœopathists are not members of this Society. This is wrong, but it is not due to any neglect on the part of our Membership Committee. It is the fault of our system. Some men need to be approached personally in order to induce them to join. It is every homœopathist's duty to belong to this organization. Membership in the State So-

ciety protects the members' interests and puts them in touch with all that is of importance in the medical world. We should always be alert to protect the interests of Our School.

It is with profound regret that I bring the subject of arrears of dues to your attention. Approximately one hundred members are in arrears. Some of them vie with each other for supremacy in this particular. Two, for instance, should be mentioned, as being eight years back. Even our Society needs financial encouragement.

These suggestions are respectfully submitted to this Society, with the hope that they will be received in a spirit of kindly criticism, and that, with perhaps some necessary modifications, they may meet with a ready acceptance.

In Philadelphia, we have been encouraged by a campaign conducted by the West Philadelphia Homœopathic Hospital, which succeeded in raising one hundred thousand dollars towards a new building. The Women's Homœopathic Hospital has added a new thirty-thousand-dollar building to its plant. The Women's Southern Homœopathic Hospital is a magnificent structure, not much more than a year old. New hospitals have also been erected at West Chester and Pottstown. The Hahnemann Medical College and Hospital of Philadelphia is our chief educational institution. It has been placed in Class A by the Board of Medical Education and Licensure of this State and will soon be in Class A plus. Its interests here are well protected by Doctors Maddux and Stewart. Three years ago Dr. J. M. Baldy, president of the State Board of Medical Education and Licensure, said:

"I mention the one homœopathic school. That, of course, is the Hahnemann College; and there is no medical college in the State better. It is quite as good and quite as efficient, and its standards are quite as high as are those of the University of Pennsylvania Medical School or any other allopathic school."

The college instructors are all loyal in working for the institution's interests. The college is very necessary to us—peculiarly and vitally so. Although its primary object is to educate physicians, yet it serves, too, as a guarantee of good standing to each alumnus. Although our institution is a great one scientifically, yet it needs money, students and publicity. You may ask, Are these not problems for its Trustees to solve, rather than for the State Society? Certainly; but co-operation from the Alumni—and most of our State Society members are

Hahnemann Alumni—can very materially assist us. How then can you help Hahnemann most and thus show your loyalty? Because, after all, you owe to Hahnemann a debt which you can hardly repay; since she gave you an opportunity to make a place in the world, and to procure a reputation for yourself and a living for your family. You can do so by interesting your wealthy patients to give money to the College, and by sending it students. Despite the higher requirements necessary for matriculation, we could still have more students, if a systematic endeavor were made by every alumnus to obtain them; and while it costs more to educate a student than he pays for tuition, yet this deficiency could be met. To accomplish these things, a publicity agent is necessary. It is asking too much of a dean to be a scientist and a business man as well. This agent could also act, as before mentioned, for the Publicity Bureau of the State Society.

Medical co-education at Hahnemann should also be considered. Some women are peculiarly fitted to become doctors; and I believe that it would be advantageous to have them. I so expressed myself a few months ago through the columns of the daily press. Medical co-education is a success at Johns Hopkins, Cornell and the Boston Homœopathic Medical College; and this year, the University of Pennsylvania Medical School has opened its doors to women matriculates.

To meet these requirements, we have a Graduate Alumni Council, whose object is to arouse interest among the college alumni. We are trying for a million dollar endowment. Your institution, with its high scientific attainment, deserves it.

In conclusion, I desire to thank all the members of this Society for the honor which they have conferred upon me, and for their uniform courtesy, encouragement and support. The year's work has thereby been made a pleasure. Especially are my thanks extended to the officers of this Society, to Dr. Hillegas, chairman of the Exhibits Committee, and to the Chairman and associates of the Bureaus, who have contributed so largely toward this successful meeting.

Transactions of the Homoeopathic Medical Society of the State of Pennsylvania.

BUREAU OF SURGERY, GYNECOLOGY AND OBSTETRICS

THE USE OF HEATED ETHER AND OXYGEN IN PROLONGED OPERATIONS.

BY

R. FRANKLIN HILL, M. D., PHILADELPHIA.

Anaesthetist to the Hahnemann Hospital, Philadelphia, Pa.

I HAVE the pleasure of presenting to this Society to-day some original work on the employment of heated ether and oxygen. Ever since the discovery of ether as an anaesthetic by Morton in 1846 various combinations have been experimented with. Some have been successful but the majority have been failures. The combination of ether and oxygen cold, ether and chloroform, nitrous oxide oxygen, have met with wonderful success and have had their advocates, but the safest anaesthetic, where deep surgical anaesthesia is required is ether. This agent alone stands out above all the others in prolonged operations.

It has been found by experiment that for every fraction of a degree of heat in the anaesthetic agent above that of the room temperature the body heat of the patient is maintained. The combination of oxygen heated with the heated anaesthetic increases the value of the anaesthetic in rendering it safer to the patient without decreasing the anaesthetic qualities.

In November, 1913, I started to experiment with heated ether and oxygen and the results have been very successful. With this small, inexpensive, portable apparatus which I have, I have used the combination of heated ether and oxygen in many difficult operations. Operations upon the brain to ingrowing toenails have been done under this method. I have used this anaesthetic in 229 general surgical operations without a fatality and no post-operative treatment for shock. The youngest patient, a baby three months old, weighed eight

pounds, and the oldest patient was a man of 85 who underwent a radical mastoid.

CASE No. 1.—W. R. W., patient of Dr. H. L. Northrop, operated at Hahnemann Hospital February 14, 1914, for stone in the pelvis of the kidney. Duration of operation, two hours and twenty minutes.

CASE No. 2.—R. K., patient of Dr. G. J. Palen, operated at Hahnemann Hospital March 16, 1914, for brain abscess and radical mastoid. Duration of the operation, two hours and fifty-three minutes.

CASE No. 3.—Baby, name unknown, aged three months, weighed eight pounds, operated at Hahnemann Hospital April 3, 1914, for spina-bifida. Duration of the operation, forty-eight minutes.

CASE No. 4.—Miss E. T., patient of Dr. H. L. Northrop, operated at Hahnemann Hospital for serous cyst of broad ligament. Duration of the operation, one hour and thirty-five minutes.

CASE No. 5.—Mrs. M., patient of Dr. H. L. Northrop, operated at Women's Southern Homœopathic Hospital, July 15, 1914, for large goitre. Duration of operation, one hour and forty-five minutes.

CASE No. 6.—Miss X., patient of Dr. H. L. Northrop, operated on at the Hahnemann Hospital, September 21, 1914, for cystic goitre. Duration of the operation, fifty minutes.

The above cases have all had this anaesthetic. It was not necessary to give them any post-operative treatment for shock. The time to produce anaesthesia is from one and a half to four minutes. In children about fifteen to twenty inhalations results in their being ready for operations. There is a lessening of nausea and vomiting and in fact, it may be said, they are not present at all. There is also lessening of the formation of mucus and the patients do not run the risk of post-operative bronchitis and so-called ether pneumonia.

I have used this anaesthetic in cases where pneumonia and acute miliary tuberculosis were present without any ill after effects. There is no irritation to the pharyngeal mucous membrane and therefore there is no resulting cough and this is of great advantage to the surgeon in performing delicate operations. The oxygen heated acts as a powerful stimulant to patient with feeble vitality and to any case where shock may occur and does occur. In alcoholics, aged, asthmatics, persons suffer-

ing with bronchitis, the combination of heated ether and oxygen is a very good stimulant.

There are no contra-indications with this method, as it has been administered where grave conditions were present.

The patients react immediately, more quiet, do not complain of the after taste of the ether, and if vomiting should occur it is only present once.

In conclusion, I wish to repeat an extract from the Committee on Anaesthesia of the American Medical Association: "Every hospital, certainly every large hospital, should have as a regular member of its staff, an attending anaesthetist, as is the case in some, whose authority in this special department should be as complete as is that of the visiting physician or surgeon in their field. This arrangement will be particularly important during the next few years when the older methods of anaesthesia will be competing with, and greatly modified by, newer procedures."

(For further data, see *O. O. and L. Journal* for January, 1915).

DISCUSSION.

DR. ARTHUR HARTLEY, Philadelphia: Dr. Hill has presented a valuable paper, and brought out one of the newer and later developments of anesthesia, making useful a method devised some time ago by a lady physician of Philadelphia. The incandescent light, which heats the ether, replaces the method of refilling the can and heating it with hot water.

The face mask is an improvement, also; and the paper brings out the fact that we can give selected anesthetics in selected cases. Some cases require special attention.

I do not agree with Dr. Hill that the method is applicable to all cases. I think some would not stand it well. In some cases, it might be better to use spinal anesthesia. Scopolamin is injected hypodermically, and produces anesthesia. We also have the gas and oxygen, which has been referred to; and Dr. Crile, of Cleveland, has all his patients anesthetized in this way. Dr. Hill feels that his apparatus is doing wonderful work, because he is especially able to use it; but I think that it has some disadvantages. In a hospital where they have electricity, or in a private home, it works well; but in a country district where there is no electricity, it would not work. I wish to compliment Dr. Hill on his method.

DR. GILBERT J. PALEN, Philadelphia: I should like to say a word about the work of Dr. Hill. He is to be felicitated on the scientific way in which he is following up this important

question. Anyone who does much surgical work is interested in having an excellent anesthetist. We always pride ourselves, at Hahnemann, on having very good work in anesthesia. There is no better in the country. Dr. Hill's method is employed, and I can endorse the majority of his statements. He has given the anesthetic for me in a number of severe and long operations, and the results have been very much along the line of his description. He is to be commended for his results, and for the scientific way in which he has followed the cases up after the operation in which he has given the anesthetic.

DR. C. A. BIGLER, Philadelphia: Dr. Hill has given the anesthetic for me by this method, and it has been highly satisfactory. His work has been excellent.

DR. H. L. NORTHROP, Philadelphia: No State Society meeting would be complete without a paper on anesthesia; and we have had one to-day that has pleased us. Those of us who know the work that Dr. Hill has done in Philadelphia and neighboring towns can testify to the simplicity of the apparatus, and all that. The method appealed to me originally because of the faith Dr. Hill had in it for the treatment of people during the cold weather of the winter season, and of those predisposed to lung trouble. After having had three ether-pneumonia cases in one season, I was glad to accept a method that promised better results and an absence of any ether complication. I can say that the heated ether combined with oxygen, particularly in cases at all susceptible to lung trouble, is a great improvement on the old-fashioned method; and I see no reason why it should not be used in all cases. The success of the method depends to some extent, of course, on the man who uses it. It is important to bring out that point. It is not the apparatus alone that is responsible for the good results. It is not alone the horse that wins the race, but also the rider. Dr. Hill knows how to handle the apparatus and take care of the patient.

DR. J. M. HEIMBACH, Kane: Does this method take more or less ether than the old method, or does it not make any difference?

DR. W. A. STEWART, Pittsburgh: I have always been very fond of ether, and I think anybody is to be congratulated who devises a method to make the giving of ether safer and more pleasant. It seems to me that this is a decided improvement in the way of giving ether. In other words, it makes the method of giving ether more nearly fool-proof. It seems to me that it would be almost impossible to give ether in the way many careless operators give it by flooding the cone, and get away from two things that have been disagreeable: one, the tendency to ether pneumonia; and the other, the nausea and

vomiting that follow the use of this anesthetic in many cases. Dr. Hill assures me that the latter is almost nil. If this is true, that is a wonderful step forward; and if he has helped to make the giving of ether a little pleasanter, I think it is a great thing,—because I am so prejudiced in favor of ether, in contradistinction to any other form of anesthetic. It will not only render the patient unconscious, but it will also bring about relaxation; and there are so many operations that surgeons cannot perform without relaxation of the body of the patient. Now with the gas that has become so popular with some operators, they cannot get relaxation in a great majority of the cases. That is why, as I said a moment ago, I am delighted to see anybody improve the method of giving ether, so that it will take away the disagreeable effects that have been connected with it.

DR. H. L. NORTHROP, Philadelphia: I wish to say only a word, but it is an important one. I have been much surprised at the rapidity with which Dr. Hill gets his cases under ether. I have said nothing about this before, but I have remarked to myself how quickly the patient would appear in the operating room. Dr. Hartley is another quick anesthetist. Those of us who have to hang around the operating room, wondering at the cause of the delay in the coming in of the patients, are often disturbed, and are apt to criticise the etherizer. The rapidity with which Dr. Hill puts his patients under is quite admirable.

DR. HILL, closing: In reply to Dr. Hartley, I would say that I have used this method in all kinds of cases. The method has been employed even in the presence of pneumonia. Dr. Yeager had a patient, a boy of nine years, with mastoiditis and puncture of the ear drum. On account of pneumonia, which the child also had, he put off the operation for three days, because of the danger of giving the anesthetic in such a case. The necessity for having it performed was so great, however, that he telephoned me and asked whether I would take the chances of giving the anesthetic in a case of double mastoid, without telling me that the patient also had pneumonia. I said, "Yes"; and the operation was performed. We returned the boy to bed with a temperature of 99 degrees and a pulse of 120, although he had been two hours on the table and had double pneumonia.

In this method, the ether is concentrated; and it takes less ether than the old-fashioned method. It consumes an average of half a pint. We use six to eight gallons of oxygen and ether in an hour and thirty-five to forty-five minutes.

DR. ARTHUR HARTLEY, Philadelphia: Dr. Northrop said that we got the patients under more quickly than other anes-

thetists. By the proper method, there is very little irritating effect from the anesthetic introduced into the pharynx and throat. The gauze is held in front of the face until the mucous membrane is anesthetized; and you give the ether very slowly, using the drop method. The inexperienced anesthetist becomes disturbed when the patient is restless, and pours on more anesthetic. The air is also diminished in quantity, and the patient is suffocated and struggles. The mucous membrane becomes congested, and the skin cyanotic. The patient's jaw must then be opened and the tongue drawn out, so that the patient is long in coming to the operating room.

ADVANTAGES OF EXTERNAL PLATES IN THE TREATMENT OF COMPLICATED AND IRREDUCIBLE FRACTURES.

BY

A. R. GRANT, M. D., UTICA, N. Y.

BONES *may* be broken squarely, and if soft tissues are not interposed, such simple fractures may usually be readily reduced under anaesthesia by traction and manipulation and may be held by a padded splint. These are simple fractures.

My brief paper deals with another class of fractures, which includes all varieties of oblique, compound and complicated conditions of bone that cannot be reduced by ordinary methods, or that cannot be held in the corrected position by non-operative methods. The history of the endeavor of surgeons to splice, wire, screw, nail and plate these bones, we will not take time to relate. The fact is that the Sir Arbuthnot Lane plate has been the fashionable procedure during the last few years. Surgeons have now had opportunity to observe their results with the Lane plate and it is the author's conclusion that these results have not only been far from ideal, but have in the main, been a disappointment. In many cases these plates caused suppuration sooner or later and compelled removal: in other cases non-union resulted, probably because a little motion between the fractured ends seems necessary to stimulate osteogenesis.

The writer believes that an external bone clamp fulfills all the requirements of a holding apparatus better than any plate, wire or band. Several models have been invented but none have

been generally adopted, because none seemed readily applicable to bones of irregular contour, and also because of an indefinable fear that screws protruding through the tissues would induce infection.

The apparatus used by the writer is a modification of the Parkhill clamp, invented about fifteen years ago. It consists of four screws four inches long with a thread that will not crack the bone and a bolt head so that a wrench key may quickly turn them into place. Four flat horizontal leaves with a hole at one end of the vertical screws, each held to its respective screw by two lock nuts. The whole is locked by a clamp, gripping the horizontal leaves. The mode of application is so simple that it appeals to the man who must operate in the country, as well as the hospital operator.

TECHNIC.

"Wait three to six days after an injury before operating, in order to give the soft tissues a chance to react to the trauma and the lymph spaces to become cofferdammed against infection. Clean the skin with soap and water and shave; wash with gasoline, dry and apply 3½% iodine; make an incision over the fracture, control bleeding and adjust bones by direct manipulation. No attempt should be made to pick out loose particles of bone, large or small: if they are entirely free they will be absorbed and if they are in the least covered with periosteum they will live and hasten solid union, as pointed out by McWilliams, in his original work upon the results of transplanted bone, with and without periosteum. Hold the broken ends with a Lowman clamp, if necessary. Drill two, three or four holes in the bone ends according to the size of the bone and location of the fracture, as it is not always necessary to put in four screws. Turn the vertical screws into the bone, adjust horizontal leaves, sew soft tissues as closely as possible with silk worm gut and dress with moist gauze and a comfortable splint. Remove silkworm in two weeks and the clamp will come away easily at that time without pain, or it may remain three or four weeks if necessary.

"These clamps are readily applied to all the large bones and are successful in fractures of the jaw, clavicle and ribs, as well as any of the long bones of the extremities. Their ease of application by a surgeon working alone, if necessary, their freedom from infection, their firm retention of fragments and their

ease of removal, must appeal to surgeons who have had the usual experience with other mechanical methods.

The author believes that auto plastic bone splinting must often be indicated and that its position in bone surgery is assured, but he also believes that the external bone plate is the best means of dealing with the majority of complicated fractures.

DISCUSSION.

DR. H. L. NORTHPROP, Philadelphia: This subject is very timely, considering the great interest now being taken by the surgical profession at large in the open treatment of fractures, and the wide popularity of the Lane plate,—the internal plate, as it is called,—which has been in existence for the last few years. The Lane plate has proved disappointing. Dr. Grant has indicated its disadvantages; and I would add that when we use the smaller bones of the body, such as the tibia and fibula, or the radius and ulna, the Lane plate seems to be too large. I, for one, have hesitated to employ even the smallest size of Lane plate that I thought would answer the purpose in plating the radius and ulna. Sometimes it is necessary to plate both, if we do any plating at all. I should think that the clamp that Dr. Grant has shown us would be more valuable in cases of that sort. For one, I am very loath to put foreign bodies in the interior of the body and leave them there indefinitely. We know that, sooner or later, they do cause trouble; and where parts are so freely movable as the forearm, it is better to have an apparatus to bring about the union of the fracture and normal apposition of the bones. The apparatus can then be removed. I used the Parkhill clamp a number of years ago, with rather indifferent success. I feel, though, that to-day, with a clamp of this kind and our skill improved technique and still more modern methods than those of ten or fifteen years ago, we ought to get better results.

I agree with Dr. Grant regarding the leaving in of the fragments. It is so natural to pick out loose pieces of bone that we usually do it, but it is a disadvantage; for we are thereby lessening the chances of union and recovery of the patient. They should be left. In the majority of cases, they live, and aid in bringing about the formation of callus and the recovery of the patient.

DR. ARTHUR HARTLEY, Philadelphia: I am connected with a hospital where we have a good many fractures to treat, and I suppose that four fifths of the cases in that hospital are fracture cases. The surgeon there does not believe in much manip-

ulation or the removal of too many fragments, and he has had marvelous results.

DR. J. M. HEIMBACH, Kane: I should like to know how long Dr. Grant leaves the clamp on.

DR. GRANT, answering Dr. Heimbach: The spike is left for two weeks in most cases; but when the bones are badly disturbed and the fracture is obliged to be firmly fixed, we leave it longer—three and a half weeks.

DR. W. A. STEWART, Pittsburgh: Does infection play such a large part as in cases in which the Lane plate is used? If you happen to get infection with the Lane plate, it is very serious.

DR. GRANT, answering Dr. Stewart: There is less danger of infection. The silver screws act as drainage and as a cofferdam.

In closing, there is nothing to be said except to thank the gentlemen who have so kindly discussed my paper. Surgeons arrive at the same ends in different ways, and probably many of you have had equally good results with the Lane plate and other means as we have had with the external clamp; but we are working towards greater simplicity in all our procedures, and this is an effective method of holding the fragments in place. I am sure that no one who will follow this plan in cases of irreducible fractures will find cause for regret.

BUREAU OF SANITARY SCIENCE

VENEREAL DISEASES AS A PREVENTIVE MEDICINE PROBLEM.

BY

WILLIAM F. SNOW, A.M., M.D.

General Secretary, The American Social Hygiene Association.

IT IS to be assumed that every one of us here this afternoon agrees that venereal diseases—insofar as we limit the term to syphilis and gonococcus infections—are communicable, that enough is known of their etiology, treatment and prophylaxis to ensure their suppression and gradual eradication if this knowledge were properly applied. Furthermore, we may agree that these diseases rank with tuberculosis in prevalence and seriousness among practically all races, ages and social groups of people. This common ground being accepted, we as physicians face the question, "What are we going to do about

it?" Until recent years the answer to this question when asked was "Nothing." Probably the reason why no serious national effort has been made to attack this preventive medicine problem is to be found in the complex involvement of these diseases with the sex relations of men and women, and in the public's complete lack of general information upon the transmission and dangers of venereal diseases.

It is reassuring to recall that the whole history of preventive medicine is largely confined to the twentieth century. Scientific information in this field of medicine was being collected, of course, during the last twenty or thirty years of the nineteenth century, but the application of preventive-medicine principles on a large scale, and the realization by the American public that prevention of many diseases through public efforts is practical and desirable has come since nineteen hundred. The brilliant campaign against yellow fever and the campaign just now beginning against malaria, as insect-borne diseases; the inspiring campaign now progressing against hookworm as a soil-borne disease; the steadily growing campaign against typhoid fever, as chiefly a water and food-borne disease; the slow but tangible advances of the campaign against tuberculosis as a contact-borne disease—all have contributed to the awakening of public opinion in support of efficient health departments and social agencies, directing their efforts toward the suppression or eradication of preventable diseases.

With the growing realization of the people that venereal diseases are contact-diseases so closely limited to immediate contact, and so largely spread through the contact involved in sex relations that they might properly be called sex-contact diseases, there has come an understanding that this battle must be primarily organized against sex relations and other intimate associations of the sick with the well. It is just these forms of contact which from biological necessity and from ancestral custom are most vitally interwoven with all that is beautiful and sacred in love, marriage and the birth of children. The public has grasped this idea and finding the medical profession and health authorities silent or not agreed upon measures for action, has in characteristic fashion begun its own experiments. These experiments have included many superficial and unwise plans, but in the main have been directed toward the following:—

- (1) Popular education of men, women and children upon

such lines as have appealed to the promoters of the various points of view. (2) Promotion of a "single standard of morals." (3) Suppression of prostitution. (4) Segregation of special cases. (5) Safeguarding infants against these diseases both before and after birth. (6) Instruction of the sick in methods of preventing the transfer of their diseases to others. (7) Attack upon medical charlatans in this field. (8) Dispensary and hospital treatment to the venereally infected. (9) Minimizing marriage between the venereally infected and the well. (10) Reporting of venereal diseases to health authorities.

Although we may not agree upon the manner or method of promoting any one of these lines of attack, we will probably unanimously agree that each has its place in the consideration of venereal diseases as a preventive medicine problem.

There are a number of other measures which have a substantial following in this country, and upon which physicians must declare themselves in the near future if we are to wisely determine upon combating or promoting them. Among these policies the following are of special importance:

1. Do physicians know the simple methods for reducing the probability of infection by venereal diseases which can be applied by individuals before or after exposure; and, if they do, should these methods be given to the public?¹
2. Do physicians know of simple methods of preventing conception which may safely be applied by individuals; and if so, should these methods be given to the public?²
3. What method shall be adopted for determining the status in the community of the illegitimate child and its mother?³

These are all question upon which we have insufficient

1. The speaker illustrated his question by outlining the experiments of the Army and Navy in distributing a prophylactic package among their enlisted men.

2. The speaker summarized the evidence indicating the prevalence of efforts of many people to obtain and to use methods reported to accomplish this; also the experiences of state officers with sterilization laws; and the work of the United States Post Office in preventing the use of the mails for distribution of information on this subject.

3. The speaker summarized the existing laws and customs dealing with this problem and the premium which their operation places on abortion.

data for the crystallization of public policies, but they are questions to which our medical and moral forces should give serious study.

It is my purpose in the limited time available for this paper to present for discussion those questions only which are now on the firing-line of practical application and urgently demanding support by medical men; but first I wish to summarize from an academic point of view without reference to practicability of application the measures which our present knowledge of syphilis and gonococcus infections indicate should be considered in planning a campaign for their reduction and ultimate eradication. It will be evident that each of these steps has to a degree been covered by the experiments society is now taking:

1. Notification to the health department of all cases of infection.
2. Investigation and institution of necessary measures for community protection.
3. Medical and hospital treatment for the infected individuals.
4. Periodic examination after active treatment.
5. Advisory control of marriage.
6. Observation of families of persons known to have been infected.
7. Administrative control of those non-social individuals who refuse to co-operate in the necessary measure.
8. Attack on predisposing factors in the environment, including alcohol and prostitution.
9. Promotion of prophylactic measures which may be used by those exposed to infection.
10. Encouragement of efforts to discover methods of producing immunity against these diseases.
11. Education of the public.

Probably no better evidence that the preventive medicine problem of venereal diseases is more a moral than a medical problem is needed than the reactions of each of you, as I have read this summary of measures indicated by our scientific knowledge.

If I were discussing a new infectious disease known to be contracted through the bite of an insect, yet when once contracted to be specially capable of transmission to others

through the relations of marriage and parenthood, I believe each of the measures mentioned would be acknowledged to have its place. We would, of course, begin a campaign against the insect, but we would also actively promote the other measures. The point I would make is that the prevention of venereal infection is complicated by the necessity for determining whether there are more serious dangers to the public welfare than the spread of venereal diseases, which some of the proposed measures of prevention would promote. We recognize the importance to the individual under certain conditions of carrying firearms for his protection, yet for the common good we prohibit by law the carrying of firearms and endeavor to afford community protection in other ways. Similarly in this problem there are various measures which science may be able to prove efficacious but which many of us believe would do more moral harm than medical good and should therefore be dealt with as we deal with firearms.

To return to the special administrative phases of this problem which are now on the firing-line and require thoughtful consideration by all medical men, I wish to submit four for discussion.

First.—The attack upon medical charlatans.

This is not directly opposed by medical men, but involves so many difficulties in framing legislation and demands so much time and patience and expense in securing evidence for convictions, that physicians as a rule have not actively co-operated in this work. (The speaker presented brief statements on each of the following points:

1. Work done in Oregon and California.
2. Work being attempted in New York City.
3. Position of United States Postal authorities.
4. Effective campaigns conducted by newspapers and other agencies).

Second.—Dispensary and hospital treatment for venereal disease.

I do not think it is proper to say that the medical profession is opposed to the principle of dispensary and hospital treatment of these diseases, but every plan thus far presented has been objected to as impractical by many physicians. (The speaker took up the following: The special dispensary plan; New York Health Department work and Boston Dispensary work; Oregon's state advisory work and California's state diagnostic

work; possibilities for development of Associated Clinics for Venereal Diseases).

Third.—Minimizing marriage of the venereally infected.

Probably the majority of physicians are opposed to any plan thus far advocated for requiring a health certificate for marriage, because they believe we do not yet have practical and inexpensive methods for determining the freedom of an individual from infection. (The speaker summarized the following: the Wisconsin Law and its enforcement; the Pennsylvania Law; the bill introduced into the California Legislature; the general argument for legislation on this subject).

Fourth.—Reporting of venereal diseases to health authorities.

Almost without exception physicians at first thought oppose this as impractical and a violation of their professional ethics. Like the other three subjects just outlined, there are arguments on both sides. As a basic principle it is obvious that a health department must know the facts concerning the existence and location of cases of the diseases it is attempting to deal with, if intelligent and effective work is to be done. It is equally obvious that in dealing with these diseases in a large way the health department is peculiarly helpless unless it has the active and sympathetic co-operation of the medical profession. (The speaker discussed the following: California's Law; New York's plan; the necessity for arriving at some working basis of co-operation in this matter between physicians and health departments; the plan for the physician's choice of responsibility whereby he assumes the protection of the public if he chooses not to report his patient by name and promises to immediately report the name and address if his patient fails to carry out instructions or terminates the physician's services).

I realize that there can not be a general discussion of these points this afternoon, but in your county societies and by correspondence I hope they will be very fully discussed and that I may eventually receive the results of such discussions for passing on to other medical groups in other states.

In conclusion I desire to refer briefly to the association I represent here this afternoon. The purposes of The American Social Hygiene Association are stated in its constitution to be:

"To acquire and diffuse knowledge of the established principles and practices and of any new methods, which

promote, or give assurance of promoting, social health; to advocate the highest standards of private and public morality; to suppress commercialized vice; to organize the defense of the community by every available means, educational, sanitary, or legislative, against the diseases of vice; to conduct on request inquiries into the present condition of prostitution and venereal diseases in American towns and cities, and to secure mutual acquaintance and sympathy and co-operation among the local societies for these or similar purposes."

By training and experience I am a physician and health officer, and I am identified with this association now because I believe our scientific knowledge and the willingness of the people to co-operate with health departments and physicians in preventing the spread of venereal diseases have so progressed that we have a great opportunity to begin a successful campaign of prevention. It is the purpose of The American Social Hygiene Association to serve as a clearing house upon experiments which are being tried in this field, and to turn over the results of its observations to such organizations as yours for consideration, alteration and adoption.

THE M. D.'S ATTACK AND DEFENSE.

BY

ED. W. GILLIAM, M. D., BALTIMORE, MD.

"A DOCTOR!" ejaculated Beaumont, in a flouting tone, replying to his gossip, Brother Luke. "Doctors, sir, are frauds, sir."

To explain the flings which Beaumont often was casting at doctors, an anecdote is in order. A few years back his eyes had begun to give trouble. It was due to senile decay, and his wife fitly suggested spectacles. Quite probably Beaumont would have acted on the suggestion, had he been at the moment in a frame of mind to be advised. But he was not. For some reason or other he was out of humor and pugnacious and took a tifty issue with his wife.

No. He didn't need spectacles. He wouldn't have spectacles. Don't talk to him about spectacles. There was some disease of the eye, etc.

A gentle reply from Madame Beaumont supporting her advice, served only to inflame Beaumont and strengthen his pride of opinion, and he declared his purpose then and there to seek a doctor and have his eyes treated.

Madame Beaumont replied that it would be a wise step, and expressed the hope that the prescription might not exceed a pair of spectacles. It was kindly meant by her, an amiable wish that the case might not prove at all serious. But Beaumont was in one of his fits of antagonistic perversity, and "spectacles" repeated actually roused the man into a species of fury.

"Tut, tut!" he broke out, in loud, excited tones, and with snapping eyes, "you will persist in forcing spectacles upon me. Don't I know what I need better than you or anyone else? Do let me ask: Are not my eyes my own? If my nose is to be bridged, am I not to be allowed to bridge it myself? I tell you again, I don't require spectacles. I tell you I won't have the things, and I'll go right off to consult a doctor, and you shall see, Madame, that I am right."

Beaumont ceased, glared around, seized his hat, and, with a briskness out of keeping with his years and appearance, strode from the room, astonished at his wife's ignorant obstinacy.

At that time practicing in Paris were a brace of peripatetic oculists, who, having *done* the provinces, had set up shop temporarily in the city. Associated professionally and commercially, and playing into each other's hands, they had opened separate offices in reputable sections, furnished them handsomely, and, aided by energetic advertising, had been doing a notable business. To one of these specialists, recommended by a friend to whom he had spoken of his eyes, Beaumont now bent his steps. Still heated by the tantrum into which he had worked himself, he sharply repeated to the doctor the substance of what he had just said to his wife—that his friends, like a pack of fools, were endeavoring to force spectacles upon him—that he didn't need them and wouldn't have them—that his mother had lived to be ninety-one without using glasses—that he knew there was something the matter with his eyes—that he had come for treatment, and was able to pay—and that he was determined to convince his friends that he was right, etc.

The oculist, a capable man professionally, examined the eyes, and at once saw that nothing more than lenses were required. But he paused before giving the prescription. He was far better equipped with skill than with character. Taking in at a

glance the whole situation, appreciating fully Beaumont's imperative humor, he saw an apparent opportunity for special profits, and began feeling around his patient. In a brief conversation he drew from him a satisfactory view of his finances, and as he was soon to leave Paris for London, and had had occasion before to slip cable under a change of name on account of samples of practice not set down in the code, he resolved upon treating this case, as he had treated some others, from the point of view of the patient's insistent whims, rather than from that of professional duty.

Re-examining, therefore, the eyes at much length and with a great show of instruments, he described the affection by a long and a learned name, declared spectacles were often ignorantly and injuriously prescribed, promised sure but slow recovery, gave a wash and a box of pills with minute directions, pocketed a fat fee, and counseled daily office visits.

The fee was much in excess of what Beaumont had anticipated. He paid it, however, without an outward sign of dissatisfaction, and comforted himself with having evened up with the M. D. by indulging already in an excess of exultation over Madame Beaumont in recounting to her on reaching home the occurrences of the doctor's office.

So matters went on for a week or two, Beaumont getting abundant supplies of pills receivable, and handing over to the M. D. full returns on bills payable. The latter by this time having completed arrangements for leaving the city, he addressed two notes, one to M. Beaumont, the other to his associate, who was to leave later on. The former note ran thus: That he had been called suddenly from the city, to be absent a period, and that he recommended him (Beaumont) to the care of a brother doctor (giving name and address), an expert of exceptional skill whom he had consulted already in the case, and who would complete the recovery. The latter note, to the doctor, stated, that, on the eve of departure, he had turned over to him a profitable patient, M. Beaumont (giving address)—that he required no more than a pair of lenses, but as he had insisted on other treatment, declaring absolutely he would not use spectacles, he had felt himself in duty bound to gratify him. That he had been treating him for some weeks for such and such an affection of the eyes (giving name of disease), charging so and so per office visit—that he had given simple washes and boxes of placeboes, with directions galore—and that he need

not hesitate to milk him freely, since his bags were full, though somewhat hard to draw, and should be greased judiciously. A postscript added, that in the hurry of leaving it had not been reasonably possible to call, and so he had written—and that he hoped to receive from him in London a satisfactory report of the case.

But the hurry of departure was attended by an unfortunate incident. The notes inadvertently changed places, and got, each, into the other addressed envelope. When Calvin Beaumont read that addressed to the fellow-practitioner, the state of his mind can be imagined. Red hot and accompanied by an officer of the law with writ to arrest, he put out for the Doctors, first for the one, then for the other. But they had discovered the *faux-pas* and taken flight. Beaumont, in his rage, hastened to London in pursuit, but no trace of the skinning doctors could he find.

Beaumont kept it all a profound secret, and the doctors being no less zealous in maintaining silence, the matter never got out. But Beaumont exhibited certain exterior and visible signs. Madame Beaumont, for instance, could not fail to note that suddenly he had ceased speaking of treatment, as well as exulting over her; and that, coincident with this silence, there was a most violent outbreak against doctors, astonishing to her and to his friends. The rancour was deep and abiding, and transferred to the entire profession. Only in a violent illness did he ever now send for a physician, and never then for what is called a "regular." An opportunity to cry down doctors he never missed. Everything he heard in their disparagement he treasured up. He read an elaborate history of medicine, and ransacked literature for points against doctors, and was surprised and gratified to find that in every age so many men of parts and reputation have doubted the usefulness, if they have not out-and-out stigmatized, the profession.

To Madame Beaumont's immediate reference to these changes, he returned short and evasive answers. She saw the allusion gave umbrage and did not repeat it. But she had her opinions.

One morning later on Beaumont came in with a pair of spectacles bridging his nose. He entered his wife's presence in a shy sort of way, anticipating an observation. Madame Beaumont, however, did not utter a syllable upon what evidently she saw. There was not even a smile, or aught of sound or ex-

pression to intimate her sense of the change. Beaumont was touched by this delicate silence, a circumstance he might have anticipated from so sweet and considerate a soul. All at once he seized his hat and bounced out of the room. He had done the like on a former occasion, but not in the like spirit. There was no "glaring around" now, as he left. He smiled upon his wife with a pleased, expansive countenance, and returned anon to present her with an elegant shawl which she had been examining at a certain bazaar, and for which he had heard her express a desire.

To resume our thread: "A Doctor!" ejaculated Beaumont, catching at the word in Brother Luke's announcement, and discharging it in a jerky, guttural way, as if ejecting something nauseous.

"You appear not to fancy doctors," remarked Brother Luke, who felt a little ruffled at Beaumont's contemptuous expression, the doctor alluded to being a warm personal friend.

An emphatic "Yes" was the reply.

"The science of medicine—" Brother Luke began to observe.

"The science of medicine!" interrupted Beaumont with an exclamatory sneer. "Fiddlesticks! It's an art and no more, and despicable at that in its manifold failures."

"Certainly, sir, it is a learned profession, universally recognized to be such," spoke up Brother Luke, surprised at Beaumont's sentiment, and still more at the spirit of its utterance.

"A learned profession!" ironically retorted Beaumont. "True, that the approaches to the most difficult of subjects, the comprehension of the human body, demand cultivated minds. But who has attained to a proper knowledge of that subject? Who knows how disease is cured, or the effect of drugs on disease, supposing they have *any* healing effect? Do they act directly on disease? Or does their virtue stand simply in causing a reaction of the organism? Are not the functions of important organs, like the liver, still a matter of dispute? Who has searched out the nature of the nervous influence? Or has any one been able to trace even a material nerve fibre from its peripheral extremity to the brain? That the profession is learned by reason of its controversies over treatment, and in the tricks of the charlatan, I am willing to acknowledge."

"Upon my word, Monsieur Beaumont, you must be quizzing. That the medical profession is learned in the best and highest sense of the word, that it is illustrated by multitudes of distin-

guished names, men of genius and research in every age, whose records constitute a vast and scientific literature, is a fact which never before have I heard questioned. And I may add that in its nobleness, the spirit of going about doing good, assuaging the disorders and pains of the body, it must be regarded as second only to the priestly office, that ministers to the disorders of the soul. As expressive of my own judgment, I adopt these words of a recent writer, who voices, I do not doubt, the reputable sentiment of the civilized world, and his statement is a true and striking one."

"Striking, because embroidered with lies," growled Beaumont, kindling at the opportunity to pour out his vials of wrath. "Their records, indeed! What, sir, is the history of medicine, as a whole, but a history of professional failure? Is not the enormous success of the patent medicine man a standing witness of the imbecility of the doctors?"

"Might it not be a witness rather of the gullability of the laity?" interposed Brother Luke.

"What is medical literature largely," rushed on Beaumont, not regarding the interrupting, "but a record of changing methods, of the wrangling of schools, and controversies touching treatment? And as to the nobleness, whatever may be the theoretical view of the profession, as a matter of fact the doctor's life soon sinks to the level of a vulgar, mercenary scuffle, and scheming to get at the practice of the other fellow. He works his noble calling for all it is worth for filthy lucre's sake and bread and butter."

"You deny, then, there are such things as noble doctors," said Brother Luke, having in his mind's eye certain well-known Parisian physicians of universally recognized noble characters, and spreading a net for the visitor.

"No," the latter replied, lifting his eyebrows and opening wide the eyes, where a wicked little twinkle apparently showed his sense of the drift of Brother Luke's remark. "There may be noble doctors; but they were noble men originally, and have preserved such a character in spite of professional tendency."

"In spite of professional tendency!" ejaculated the brother, with a constant growing wonder at Beaumont's words and bitterness of manner.

"Yes—and I say it advisedly. Have you never reflected that this daily contact with suffering and death must exert a necessary trend toward insensibility and moral hardening? And

does it not strengthen this view that the church has fewer accessions to its ministry from among doctors, than from any other professional class—than from lawyers, for instance, to make the case still stronger—lawyers, whose professional bias, in the common comprehension, turns away from God and elevated morals?"

Deeming it here more to his purpose to propound a question of his own, than to answer Beaumont's, Brother Luke asked:

"Has not human life, sir, lengthened in recent years?"

"Yes."

"And should not this be placed to the credit of the doctors?"

"No."

"To what, then?"

"To improved hygiene, to judicious regimen. We are a decaying race, Brother Luke. Hygiene is keeping alive a vast number of weakening bodies. The true test of the physical vigor of a period, is not the average life of men, but the percentage of those who reach great age; and by this test we are a decaying race."

Whether or not Brother Luke had an answer, we cannot say. At any rate Beaumont did not wait for it, but went on, delivering his treasured up spleen with ringing earnestness, as he recalled his experience with the oculists:

"But, sir, apart from this, doctors, I take it, are a lot of money-grabbers. Don't they charge roundly for visits, and then make themselves sole judges of the number, besides? It's a colossal outrage. What would you say of your grocer, should he run up bills without your orders, sending you his goods at his own option, as *he* thinks you need them? Yes, they make a lot of money-grabbers. I have a fancy your namesake in the Gospel, the beloved physician, got his title from not charging fees, receiving instead free-will offerings, as to-day prevails in those countries where doctors are best thought of. There is not the least doubt that very many of these visits are totally unnecessary, made simply to run up bills; and a sense of this on the part of patients, has given rise to the doctors' universal plaint, the ingratitude and slow pay of those they serve. An honest poor man who means to pay his debts, dreads a physician's bill above all others, and fears being obliged to send for the doctor, as he would fear a fire."

"The M. D.—" broke in Brother Luke in reply.

"O yes!" broke in Beaumont. "Call him M. D. It reminds me. Fits him to a T. No truer name could be. But did you ever think of what it properly stands for? It really means, 'Money Down,' 'Much Dust,' 'Many Ducats.' You may take your choice. In other days, by a happy thought, he was called, too, a 'leech,' and may be called so still; for he keeps up the character. With his long bill he is as fine a sucker as ever."

"I was about to observe, when you interrupted me," said Brother Luke with some spirit (for he was becoming annoyed), "that physicians can be termed money-grabbers only by a wilful perversion of plain facts. As a class they are known to be relatively not rich. Neither generally are they avaricious, and, I am sure, would rather see health returning than bills growing. Eighty per cent. of them are said to be poor."

"Good Lord! there are so many."

"But, why, sir, so many—why should the profession be so sought, when it neither brings wealth, nor, as you hold, is practiced with honor? What can be the attraction?"

"Its mystery, its difficulty, its unsolved problems—just as the pole once attracted the navigator."

There are opinions so current, received so generally as being true, that we accept them as matters of course, and have not accustomed ourselves to consider the grounds supporting them, or the possible quibbles that may be charged against them. When we happen suddenly to be drawn into the defense of one of these opinions or aphorisms against a posted assailant, it is with surprise and chagrin that we find ourselves at a disadvantage. Thus it was on this occasion with Brother Luke. That he (in mind and in attainments far superior to Beaumont) was unable, in so plain a case, to make the right side appear at once to be such, annoyed him, and, though drawn into the contention casually and in a bantering way, he now found himself bracing up to maintain his view, both because he thought it manifestly the just view, and because he felt an impulse of conscience to antagonize the spite that bristled so offensively in the expression of M. Beaumont's sentiments. The latter saw the movement in the good Brother's mind, and hailed it. He was ready always to show his teeth at the doctors. Often in vain he sought among his friends to make opportunities. Grown familiar with his peculiar views they had come to refuse conversation on this topic, and Beaumont's bottled-up and bubbling bile welcomed an opening to discharge itself. As to the result

of the contention, he felt pretty safe in having behind him a copious fund of anti-doctor information.

"Sir," spoke up Brother Luke, who, having made a requisition upon his mental resources, had prepared a little speech, and now gave it forth with due deliberation, measuring his words and delivering them with full weight, "the history of medicine, in its sphere, is the history of the human race. In all ages, among all peoples, its profession has stood at the front, advancing with the nation's life, best illustrated among those most advanced, at once the handmaid and gauge of progress and civilization. An institution, sir, whose patronage is co-extensive with the race, and to whose honor and usefulness the judgment of men from the beginning, bears witness, cannot be without truth on its side. You challenge, sir, the common consent of the world."

The closing sentence of Brother Luke's speech, touching "common consent," did not involve a conclusive argument, and to this statement Beaumont was shrewd enough to respond:

"Brother Luke, common consent is not a demonstration. It measures a certain probability—no more. For ages, with all peoples, among the most advanced nations, the world, by common consent, was held to be flat, not round."

The good brother paused—then asked:

"What solution do you propose for the fact of this vast and eminent institution, with its universities, colleges, and faculties, entrenched in enlightened public opinion, and commanding, I may say, a universal patronage?"

"The influence of tradition, sir—the force of habit, sir—the natural impulse, in the presence of suffering and death, to grasp at aught promising relief—a modicum of truth in the application of a few remedies that are really effectual—and the powerful aid derived from a close alliance with surgery, touching whose principles and methods there seems to be some certainty, as well as advancement."

"You really believe, then, that doctors are frauds?"

"Yes—the great body of them. Now and then a real doctor appears—a master hand that knows his craft. But the mass are a lot of incompetents. Intelligent doctors admit that the knowledge of medicine is deplorably imperfect. Their practice, outside of very narrow limits, is but a series of experiments, an application of deceptive precedents, an attempt of sciolists at the most difficult of all arts. Drugs, I believe, kill

as often as they cure. When possibly they may relieve in one direction, they lay the foundation for disease in another; and it really is a question (and you would be surprised to know how many eminent men in every age have held the opinion) whether the world would not have been better off, if a single doctor never had existed."

"If doctors be all frauds, then they who make use of them must be all fools," observed Brother Luke, who, happening to know that Beaumont employed a physician, was preparing an *argumentum ad hominem*.

"Yes—so far, certainly."

"Do you never, sir, send for a doctor?"

"No—never for a 'regular'—that is, on my own account. The last doctor I employed personally, was Samuel Hahnemann."

At the mention of Hahnemann's name a visible change at once manifested itself in the features and manner of Brother Luke. The involuntary controversialist suddenly shifted into an interested inquirer. A year or two prior to this, as the result of a studious examination, Brother Luke had accepted the Hahnemannian principle of therapeutics, and subsequently, whenever the occasion arose, he had sent for a physician of the Hahnemannian school. This particular physician had held intimate and special personal relations to Hahnemann from the day of his entrance to Paris in 1835, up to his death, eight years later, and the admiration he felt for the personality of the master, he had infused in a super-concentrated form into Brother Luke. In fact, the latter became a veritable zealot. He deeply regretted he had never seen the famous doctor. Whenever he met one who had known him, he was most forward in plying questions, and never seemed to weary of hearing accounts of Hahnemann's mode of life, personal appearance, and of the anecdotes connected with him.

"Then you favor the profession to the extent of the Hahnemann school?" said Brother Luke, with an expansive, brightened expression of countenance.

"No. I went to Hahnemann, because the 'regulars,' the Faculty, were all down upon him."

"You have seen a man I greatly regret not having seen myself," observed the Brother.

"He was a man among men, sir."

"Of extraordinary genius and profound learning, I am told."

"There was something about him more than learning—a special magnetism. Though all Paris was talking of him, I sought his office, I may say, as that of a charlatan, to express my sentiments toward the Faculty. But I was astonished, and received an impression that caused me to repeat my visits, and to study this man."

"What struck you most?" Brother Luke eagerly inquired.

"Everything was striking. Everything was a pink. The extended lines of carriage and equipage in waiting before the gates, the splendid mansion, the finest in the rue de Milan—the immaculate valets—the suite of elegant salons, lavishly adorned with rare vases and statuary, and superb genre and historic paintings—the throng of fashionable and distinguished-looking patients—"

"It is said his office fees alone reached 200,000 francs a year," interposed Brother Luke, who, in his satisfaction at Beaumont's spirited statement, so far forgot propriety as to interrupt.

"No doubt of it. I counted, before my turn came, seventy-six in waiting. All this produced a sense of distinction wholly unexpected, and I sat a brace of hours with a growing curiosity to see the man around whom all this interest revolved."

"And you appear not to have been disappointed."

"Yes—he proved to be a remarkable man."

"Will you please be so good as to describe him to me?" Brother Luke asked with a manner significant of keen interest.

"Certainly, certainly," replied Beaumont, who seemed himself to be somewhat enthusiastic touching Hahnemann. "I remember him most distinctly, and repeat substantially a striking portrayal: Picture to yourself a man rather below the average stature, but whose full rich morning-gown of silk apparently lifts him above it. A black velvet skull-cap surmounts a head of admirable contour. The soft, silky hair, of snowy whiteness, is brushed back, falling in curls upon his neck. The general structure of the full, broad face is powerful. The complexion, fresh. The expression, kindly. The dark, deep-set eyes, glistening. In animated conversation the delicate wings of the nostril palpitate incessantly, and the corners of the mouth quiver with the 'enthusiasm and unrest of genius.' Altogether a wonderful face, combining benevolence, intellectuality, and authority. Hahnemann, sir, was a remarkable man, indeed."

"I regret not having seen Dr. Hahnemann, the more so, be-

cause, as I have heard, he was a pronounced religious man, though not of my own household of faith."

"True. His conversation constantly was reflective of such sentiments."

"It is reported, even that his face had a luminous expression."

"Fudge! I saw no such thing. But confound me! if he didn't seem to be really a divine sort of man—possessed with the notion that the discovery of his method of healing was a special revelation from Heaven for the benefit of his fellows."

"Did he treat you successfully?"

"I will tell you: After a most minute examination he gave me a box of powders charged with a medication equally minute, and without glasses (which he never used) wrote out the most careful directions in a hand that has been described truly as being 'as firm as a man's should be, fine enough to be a woman's, and elegant enough to be traced on copper-plates,' and all this, be it remembered, true of him in his eighty-fifth year, at this great age strong and active, apparently in perfect health, and supporting an immense practice—a most eloquent illustration of the efficacy of his method."

"Wonderful!"

"He was the most remarkable man of his day in Paris, I believe. Certainly, one of the most remarkable I have ever met."

"Were you treated successfully?"

"I had no more sciatica."

"Then you are a convert to this school of medicine?"

"I was a convert to Hahnemann, personally, and, had he lived, would have sought him always. But I am not a convert to his school. How can one be, when division is multiplied, and atoms divided and sub-divided until the dosage is nil?"

"But, sir," answered Bother Luke, who had given some attention to the subject, "I think it is a matter to be decided not speculatively, but by experience. Remember, too, the atoms are not divided, for the excellent reason that they are indivisible. The spaces between them simply are increased. At greater distance it is not impossible that they may act with unexpected energy. Besides, the entire trend of to-day's science, is to magnify the potency of the infinitesimal."

"I hold there must be a certain ratio between means and the result, and this school violently violates it."

"But you were cured by one of these small doses."

"I have not said that," replied Beaumont. "I took the little

powder and had no more sciatica. It may have been a case of *post hoc*, instead of *propter hoc*."

"So far, sir," followed Brother Luke, "I am satisfied with my side, having with me the *fact* of recovery following the dose, to which you can oppose no more than an empty *post hoc opinion*."

"*Sed finis sit*. I have an engagement and must away, offering my unreserved view upon your several allegations, that a large majority are spurious, many dubious, some curious, a few regarded true-by-us."

BUSINESS TRANSACTIONS OF THE FIFTY-FIRST SESSION OF THE HOMŒOPATHIC MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

THURSDAY, SEPTEMBER 24, 1914.—MORNING SESSION.

THE meeting was called to order at 10.45 A. M., by the president, Dr. Leon T. Ashcraft, of Philadelphia.

The invocation was delivered by Rev. J. H. Hackenburg, pastor of the Church of the Holy Cross, of Reading.

The address of welcome was made by Mr. G. F. Spencer, manager of Galen Hall.

The response was made by Dr. D. C. Kline, of Reading.

The president, Dr. Ashcraft, then delivered the President's Address. (See page 1.)

The first vice-president, Dr. J. M. Heimbach, of Kane, then appointed the following members of the Society as the Committee on the President's Address: Dr. Gilbert J. Palen, of Philadelphia; Dr. H. M. Bunting, of Norristown, and Dr. William Speakman, of Philadelphia.

The report of the secretary was given verbally by Dr. J. D. Metzger, of Pittsburg, as follows:

The report that I have to offer consists of the Minutes of the last annual meeting. These have been recorded at length, giving the program, as well as the proceedings of last year's session, and have been published in the HAHNEMANNIAN MONTHLY during the year. As everyone here has, I presume, read them, I suggest that they be considered as having been read.

Upon motion this was done and minutes were adopted.
The report of the treasurer, Dr. Ella D. Goff, of Pittsburg,
was as follows:

ANNUAL REPORT OF TREASURER, ELLA D. GOFF.

Ella D. Goff, Treasurer,
in account with
Homœopathic Medical Society of Pennsylvania.

DR.

1913.			
Sept.	1.—To balance	\$1,272.42	
1914.			
Sept.	14.—To annual dues collected ...	1,068.00	
	Bal. received from exhibits .	117.00	
		<hr/>	\$2,457.42

CR.

1913.			
Sept.	3.—Order 150 to E. H. Pond, Secy., printing, postage, transportation	\$85.00	
"	3.—Order 151 to E. D. Goff Treas., stamped envelopes with printing. Cabinet bill heads, transportation.	91.00	
"	31.—Order 152 to Charles A. Ley, Membership Committee ..	26.91	
"	18.—Order 153 to Dick Press, ptg.	39.25	
"	3.—Order 154 to H. S. Nicholson, printing	26.65	
"	20.—Order 155 to Lulu Gay, sten.	125.00	
"	3.—Orders 142 and 156 to W. J. Martin, for Entertainment Committee	192.25	
"	3.—Order 158 to W. H. Keim, M. D. for Pemberton Dudley Memorial	50.00	
"	10.—Order 157 to E. Petric Hoyle, M. D., for International Homœopathic Council ...	50.00	
1914.			
Jan.	—Order 159 to HAHNEMANNIAN MONTHLY, for members paying back dues	96.00	

April 3.—Order 160 to HAHNEMANN- IAN MONTHLY, for members	656.00
	<hr/> \$1,427.36
Sept. 14.—Balance on hand	\$1,030.06
	<hr/> \$2,457.42

Respectfully submitted,

ELLA D. GOFF,

Dr. Ashcraft appointed as Committee on Treasurer's Report: Dr. D. P. Maddux, of Chester; Dr. W. A. Stewart, of Pittsburgh; Dr. W. C. Hunsicker, of Philadelphia, and Dr. C. I. Haman, of Reading.

The report of the Board of Trustees was given verbally by its secretary, Dr. Wm. M. Hillegas, of Philadelphia, as follows:

"The Board of Trustees desires to report that it has met at intervals during the year and has paid most of the bills of the Society. The remainder will be acted upon to-morrow. The Board wishes to recommend that in the future the officers of the Society shall assume their duties on the first of November, instead of the first of January, following their elections. The Board also desires to recommend that the dues of the Society be restored to the former amount of five dollars a year, as they now seem insufficient to meet the current expenses."

On motion, duly seconded, the report of the Board of Trustees was adopted.

The report of the Committee on Organization, Registration and Statistics was presented by Dr. I. D. Metzger, its chairman, as follows:

"The statistics consist of a number of societies, hospitals and dispensaries in the State. As secretary of the State Society, I am supposed to keep a list of these, with data concerning them. I will read the record of one, showing what data are gathered and kept on record. There are, in the State, thirty-seven local societies. We have twelve purely homœopathic hospitals and one insane asylum. Aside from these twelve hospitals, many are open to homœopathic physicians and we have the same number of dispensaries."

(The list of societies, etc., will be published in a later issue. The secretary is attempting to get accurate and full data concerning these.)

Report of the Legislative Committee:

Mr. President, Fellow Members of the Homœopathic Medical Society of the State of Pennsylvania:

Your Committee on Medical Legislation can submit but a

brief report this year as the State Legislature having adjourned in June, 1913, after an active session does not convene until January, 1915. The committee has, therefore, had no active function since the last meeting of this Society. As regards future legislation, there seems to be no active part anticipated. This committee, however, will be alert and will follow very closely any legislation introduced to antagonize the interests of the medical profession in general and the homœopathic profession in particular. It is not anticipated, however, that there will be any active campaign against the interests of the medical profession in this coming session of the Legislature.

Respectfully submitted,

JOHN J. TULLER, *Chairman.*

Upon motion the report was received.

The report of the Membership Committee was postponed, pending the arrival of its chairman, Dr. Charles Ley, of Pittsburgh.

The report of the Committee to Encourage the Study of Homœopathy was given verbally by its chairman, Dr. B. F. Books, of Altoona, as follows:

"Your committee has nothing upon which to report. We have outlined a certain scheme of work which we have already begun, and which I have followed up by sending out a number of letters that I hope will bear fruit. We intend to continue this work very persistently."

The report of the Committee for Combating the Social Evil was read by Dr. Emma T. Schrinier, of Philadelphia, as follows:

"The subject is fairly before the public. Children are receiving instruction in the lower grades as well as in the high schools and colleges.

"Many of the best papers discuss these questions.

"No one need be in the dark as to the dangers and their remedies. It remains with us—individually—to 'Do the right as God gives us to see the right.'

"Your committee believes that its work is done and respectfully asks to be dismissed.

"EMMA T. SCHRINER, *Chairman.*"

The report of the Delegates to the Interstate Committee of the American Institute of Homœopathy was read by Dr. Augustus Korndoerfer, of Philadelphia, its chairman, and was as follows:

Your delegates to the Interstate Committee of the American

Institute of Homœopathy beg leave to report: that no meeting of the Interstate Committee was held.

In this connection, your delegates desire to emphasize the importance of the work falling within the duties of the Interstate Committee, and would urge that some action be taken looking toward the avoidance of such failures in the future. Provision should be made for ad interim meetings or conferences among the delegates, whereby the interests of the various States might be given due consideration, and be so adjusted as to advance the cause of homœopathy throughout the country.

And further, we would suggest that the State Society delegates receive notice of their appointment early in the year, and that when possible they should be instructed as to any propositions, in the consideration of which, this Society may be especially interested, or may desire some specific action.

AUG. KORNDORFER.

JOHN J. TULLER.

Upon motion the report was accepted.

REPORT OF THE NECROLOGIST, DR. WM. F. BAKER.

WILLIAM PENNINGTON MULLIN, M. D.

Dr. Mullin, Hahnemann Medical College of Philadelphia, 1881; of Chestnut Hill, Philadelphia, died in St. Luke's Hospital in Philadelphia, November 14th, aged 52.

CHARLES H. LEE, M. D.

Dr. Lee, Hahnemann Medical College, Philadelphia, 1864; died at his home in New Castle, Pa., November 12th, aged 73.

OBITUARY.

Dr. Zachariah Taylor Miller, who for many years was associated with Dr. James H. McClelland on the staff of the Homœopathic Hospital, died at his home, 2015 Carson street, Pittsburgh, Pa., on Friday morning, November 14th, at three o'clock, and less than an hour later Dr. McClelland passed away at his home at Fifth and Wilkins avenue. Dr. Miller's death was due to rheumatism of the heart. Dr. McClelland's death was the result of overwork and heart trouble. Both men were close friends and companions in their social and professional lives. Dr. Miller, like Dr. McClelland, was a distinguished practitioner of homœopathy in Pennsylvania. He studied medicine in New

York Medical College and the Philadelphia Medical College. He held the highest offices in the County Society of Homœopathy, the State Society and the American Institute of Homœopathy, of which he was past president and a honored senior.

DR. HERBERT F. HEILNER.

Dr. Heilner died at Scranton, Pa., on the 20th day of February, 1914, after a brief illness, aged 50 years.

He has been connected with the work of this Society for several years and was well known all over the State. Always active in the cause of homœopathy he joined the American Institute in 1887 and was actively engaged in practice till the date of his death.

DR. FRANKLIN J. SLOUGH.

Dr. Slough died at his home in Allentown, April 13, 1914, after 50 years of active practice in the cause of homœopathy and good citizenship.

Joining the Institute of Homœopathy in 1876 and was actively engaged in its affairs almost to the time of his death.

In the death of Dr. Slough, Allentown loses one of its foremost practitioners and the State Society a useful member.

DR. CALEB S. MIDDLETON.

This Society has lost in the death of Dr. Middleton one of its earlier members and an untiring worker in the field of homœopathy in the State of Pennsylvania. Always to the front in matters of medical education he had held a position of Examiner on the State Board of Medical Examiners, and trustee of the Hahnemann Medical College of Philadelphia.

Until 1912, Dr. Middleton was actively engaged in the practice of his profession in Philadelphia, Pa., but at that time seeking a little ease from his work he moved to Ardmore, where he died.

Dr. Middleton was born in New Jersey, near Trenton, in 1839. After receiving his early education in the Trenton Academy was graduated at the Hahnemann Hospital and College of Philadelphia, Pa., and immediately devoted himself to the perfection of the homœopathic practice, building up one of the largest and best in the northern section of the city. Never losing interest in his Alma Mater he was elected to the position of trustee, which position he filled well.

Taking up Masonic instruction early he likewise advanced to a high point in his social sphere.

Feeling the active duties of his profession as being too much at 74 years of age he retired and devoted his time exclusively to medical education and its advancement. We were always glad to welcome Dr. Middleton in all our social functions, looking upon him as one of the advance guard and always cheered by his optimistic view of things in general.

His advancing heart condition caused his death on June 14, 1914.

DEATH OF DR. W. D. CARTER.

Dr. Woodward D. Carter, a member of the faculty of Hahnemann College, died to-day at his home, 1315 So. Broad street, following a severe attack of grip, with complications. He was forty-seven years old.

Dr. Carter was a graduate of Hahnemann College in 1894. He was a long time active in the affairs of the Alumni Association, and was formerly secretary of it. Some time ago he was appointed teacher on the gynecological staff of the college.

When Dr. Carter first graduated, he entered the Metropolitan Hospital in New York as an interne. Later he came to Philadelphia to practice. He was a member of the Homœopathic County Society, The Homœopathic Society of Pennsylvania, The American Institute of Homœopathy, the Surgical and Gynecological Society of the American Institute, the William B. VanLennep Clinical Club and the Union League.

Dr. Carter leaves a widow, mother and father and a brother, who is a missionary in India. The funeral will be held Saturday afternoon at 2 o'clock. Interment will be in West Laurel Hill Cemetery.

DR. JAMES MCCLELLAND, WORLD-FAMED SURGEON, DIES IN LOCAL HOME.

Dr. James H. McClelland, world-famed as a skilled surgeon, medical writer and homœopathist, is dead in his home at Fifth and Wilkins avenues.

The noted medical practitioner died Nov. 14, 1914, presumably from overwork and heart trouble. To Pittsburg he brought considerable attention from the medical world because of his brilliant reputation in his profession.

He was born in Pittsburg, May 20, 1845, the son of J. H. McClelland, Sr., who came to this country from Ireland in 1816. Dr. McClelland's mother was a daughter of the Rev.

John Block, the first minister of the Reformed Presbyterian faith west of the Alleghenies.

Dr. McClelland at the age of 17, received an appointment to the United States Naval Academy, but was prevailed upon by the family physician, Dr. J. P. Drake, to study medicine.

He was graduated from Hahnemann College, Philadelphia, in 1867, and came to Pittsburg. He became identified with the old Homœopathic Hospital, just founded, and was placed upon the surgical staff. He was among the foremost instrumental in the founding of the new hospital, and the growth of the institution and its present efficiency has been a large part of his life work.

Dr. McClelland organized the Anatomical Society of Allegheny County, and was for several years its president, and was at one time president of the Allegheny County Medical Society. Upon repeated calls Dr. McClelland accepted the professorship in surgery at Hahemann Medical College, Philadelphia, his Alma Mater, but resigned, after having given his services for one year. When the State Board of Health was established in 1885 Dr. McClelland was appointed governor for this section of Pennsylvania, and he has been vice-president of the Associated Health Authorities of Pennsylvania, and vice-president of the Hospital Staff Association of Pennsylvania.

Dr. McClelland was appointed on the board of trustees of the Homœopathic Medical and Surgical Hospital and Dispensary of Pittsburg in 1869, and served as secretary of the board from that time until 1872. He was connected with the medical staff from the start, first on the surgical and later on the gynecological staff. He had not been at the Hospital since April 13th, the past summer and fall being chiefly devoted to travel in recuperating health that had gradually failed.

Among the professional honors achieved by him were: President of the Homœopathic Medical Society of Pennsylvania, in 1881; president of the Institute of Homœopathy, 1893-4; vice-president of the International Medical Congress, London, 1896; honorary president of the International Medical Congress, Paris, 1900; president of the International Medical Congress, 1906; president of the Pennsylvania Board of Health, 1895; president of the International Homœopathic Council, 1912-13; honorary vice-president of the British Association; honorary member of the British Homœopathic Society; honorary member of the Medical Society of Massachusetts; president of the East End Doctors' Club, of Pittsburg.

He was a thirty-second degree Mason and a member of the Pennsylvania Consistory, Scottish Rite; a member of the Pitts-

burg Golf Club and the Pittsburg Athletic Association. He attended the Shadyside Presbyterian Church.

Dr. McClelland was married in 1884 to Miss Rachel May Pears, daughter of the late John P. Pears, of Pittsburg.

He leaves his widow, two daughters, Sarah C. and Rachel P. McClelland, both at home, and one brother, Dr. Robert W. McClelland, with whom he has been associated in the practice of medicine.

Upon motion the report was accepted.

The annual report of the Allentown State Homœopathic Hospital was read by Dr. Henry I. Klopp, and was as follows:

ANNUAL REPORT OF THE HOMOEOPATHIC STATE HOSPITAL TO
THE HOMOEOPATHIC MEDICAL SOCIETY OF THE STATE OF
PENNSYLVANIA, SEPTEMBER 24, 1914. DR. HENRY
I. KLOPP, M. D., SUPERINTENDENT.

The annual report of the Homœopathic State Hospital to the Homœopathic Medical Society of the State of Pennsylvania is hereby respectfully submitted.

The Hospital official year ends May 31: in view of this the statistical data is correlated from our report to the Board of Public Charities of that date.

Movement of Population.

There were in the Hospital on June 1, 1913, 867 patients: 464 men and 403 women. During the year ending May 31, 1914, 299 patients; 143 men and 156 women, were admitted, making the whole number under treatment 1,166: 607 men and 559 women.

The total discharges within the same period numbered 189: 38 were restored to health, 20 improved, 10 unimproved, 8 not insane, 113 died.

The ages of those discharged "restored" ranged between 15 and 50 years—23 of this number under 35 years. The duration of treatment varied from two to twelve months; only one case exceeding one year. In addition to the 189 direct discharges, 44 patients were absent from the Hospital on a furlough: they still appear on our records as "connected." Of those remaining in the Hospital and connected by furlough the probability as to recovery was considered favorable in 133.

Of the 113 who "died," 6 were over 80 years of age; 18, 70 to 80 years; 29, 60 to 70 years; 18, 50 to 60 years; the remainder were distributed between the ages of 15 to 50 years.

Eighteen died from general paresis of the insane.

Seventeen died from cerebral hemorrhage.

Sixteen died from tuberculosis of the lungs.

Twenty-eight suffered from senile psychosis, with complicating physical ailments. The population at present numbers 962: 494 men, 468 women. The highest number at any one time was 962.

Medical Work.

A hospital for the mentally sick has two distinct functions to discharge. It must provide an asylum for the incurable chronic insane, and a hospital for the treatment of the hopeful or curable cases. Although we have been handicapped in the proper classification and segregation of the groups mentioned and have labored under difficulties, nevertheless we feel gratified that some progress has been made; above all, that we have restored a number of patients to normal mental health; others who improved sufficiently so as not to be dangerous to themselves or others, have also been returned to their families.

We feel especially encouraged in view of the fact that a contract has been let for a Reception Building which will form our first unit for a psychopathic division in which to segregate all of the curable cases for observation, classification and treatment. The plans of our first building include all the modern ideas for reception of the patient; continuous baths, hydrotherapy and open-air treatment. The Commonwealth owes to these helpless, afflicted patients a duty which is not fully discharged until everything possible has been accomplished to restore the curable cases to health. This must be done for humane and economic reasons as well.

The method of treatment outlined in my report to this Society last year has been uniformly adhered to,—briefly stated as follows: A course of rest in bed, an ample supply of fresh air and nutritious food, individual attention and influence, and the single homœopathic remedy; for the disturbed patients, the use of prolonged neutral tub baths or warm packs. Mechanical and drug restraint, as well as seclusion, is not employed other than for surgical reasons. We endeavor to carry out as far as practicable our treatment along humane general hospital lines.

As the patients' condition improve and progress permits, rest in bed is modified; gradual exercise, bedside suggestion and re-education are instituted,—and finally occupation therapy is employed.

The Medical Staff makes a conscientious effort to obtain full family history, tracing both mental and physical taints; the personal history of each patient is taken in detail, including onset and previous status,—in this way securing a complete record of the patient to the time of entering. Within twenty-four

hours a complete mental examination is made covering the symptoms at the onset of the psychosis; the demeanor of the patient and emotional tone is observed; orientation for time, place and persons is noted; memory is tested for both recent and remote events; the stream of thought is studied and variations from the normal noted; all the senses are tested for disturbances of perception; patient's insight and judgment are weighed and delusional ideas recorded; the patient's retention of school as well as general knowledge is inquired into to determine the presence of mental deterioration; the initial interview also includes a complete physical and neurological examination. This is augmented by frequent case notes made at regular intervals,—thus completing the history from the time of the onset of the psychosis to the day of discharge from the hospital.

Our Laboratory is in charge of one member of the medical staff who devotes his entire time to the work. The routine consists in making a urine analysis on every new patient admitted, and a yearly analysis of every case in the Hospital,—and as often as the condition of the patient demands. Within the year 1,214 specimens of urine were analyzed: 84 had presence of albumin; 93, casts; 11, sugar. The blood examinations consisted of 55 blood counts, 19 Widal's and 52 Noguchi serum reactions. Spinal punctures were made on 22 cases and various tests applied as an aid to the clinical diagnosis. A large amount of the time was devoted to bacteriological work. Various secretions and excretions were examined, including gastric and foecal analyses. We are making a "Wassermann" on all new admissions and will in time examine every patient in the institution by this method.

Daily staff meetings, at which all patients admitted are presented for examination and discussion as regards diagnosis, treatment and prognosis of the individual, continue of benefit to the patient as well as the members of the staff. All cases unclassified on their first presentation, appear for a second or third time, and others for change of diagnosis. Patients who are to be considered for trial visits home or discharge are also presented. We welcome at these meetings the attendance of all physicians who have patients at the hospital,—in fact, anyone interested in our work.

The Board of Trustees within the year elected a Consulting Staff, consisting of twenty-six members of the profession, each prominent in his chosen specialty. We appreciate the cheerful promptness with which these men have responded when called upon for consultation or for rendering special service.

Operations.

The following major operations have been performed: 6 appendectomies, 4 single and 1 double herniotomies, 1 wrist amputation, 1 appendectomy and salpingo-oophorectomy, 1 rib resection, 1 cholecystotomy, 1 tracherorrhapy and perineorrhapy, and a large number of minor operations; in addition to this there were approximately 50 special gynaecological examinations made.

Training School.

Our Training School for Nurses has been organized upon a three-year basis in accordance with the recommendation of the State Board of Registration for Nurses. In outlining our course we had in mind the possibility of becoming affiliated with some of the general hospitals and through such co-operation give our nurses a good, all-'round equipment,—thus increasing their value to our Hospital or enable them to take up private nursing the equal of any graduate or registered nurse. Very few general hospitals provide for their pupil nurses instruction and experience in the care of mental diseases. This, in part, is explained by the fact that few general practitioners have any interest in the mentally afflicted; and few general hospitals have any interest in mental patients except to get rid of them as quickly as possible. If an affiliation could be brought about with an exchange of pupil nurses it would prove of decided value to them as well as suffering humanity, and would assist us to solve some of our difficulties.

Appropriations.

This Hospital received from the 1913 Legislature, in addition to a Reception Building, of which mention has been made, a Nurses' Home for Men, two Tubercular Buildings, an Isolation Cottage, Hydro-therapeutic and Continuous Bath Equipment, tramway to convey coal from railroad to power plant; and other items,—such as dairy barn, piggery and additional laundry equipment; in all amounting to \$127,500.00.

What we may accomplish within the coming decade will largely depend on the General Assembly. If I may be permitted to frankly state my conviction,—if the "Homœopathic State Hospital" is to grow in efficiency in the care and treatment of the mentally sick, the State must provide liberally for it. Within the next six months we will have reached our full capacity and soon will be overcrowded. To properly care for this growing population it will be necessary to provide 100 additional beds annually.

Among our needs and for which we expect to apply for spe-

cial appropriation from the 1915 Legislature are the following:

Reception building for men, nurses home for women, two buildings for nurses' and attendants' dining rooms, with quarters for employes, industrial building for 50 men patients, house for farm employes, two concrete porches for the infirm and chronic disturbed patients; other items will be asked for to improve the efficiency and economy of our plant.

I am grateful to the physicians of the community and State for their interest in the institution and hope we may have the continued approval and support of our efforts in conducting the institution along progressive lines.

The report made by Dr. Klopp was accepted as read.

The secretary read the following letter:

To the Homœopathic Medical Society of the State of Pennsylvania:

FELLOW MEMBERS.—Dr. Norman Betts, Dr. John D. Ward and Dr. Wm. H. Keim, the committee appointed by the Homœopathic Medical Society of the County of Philadelphia to solicit funds for and to erect a suitable memorial at the grave of Dr. Pemberton Dudley, located in the cemetery attached to the Blockley Baptist Church, on Fifty-third street below Girard avenue, Philadelphia, have, owing to the liberality of the State Society and other generous contributors performed the duty assigned them and report said memorial erected and paid for at a cost of one hundred and ninety dollars and the enclosure thereof properly cared for.

The committee highly appreciates your kind and generous co-operation which greatly aided in the performance of this fraternal duty.

Yours fraternally,

Signed WM. H. KEIM, M. D., *Chairman.*

The letter was received and ordered filed.

It was moved and seconded that the following amendment to Article VIII, Section 2, of the By-Laws, which had been proposed at the 1913 meeting, be adopted: Add, "The Chairman of each section shall have the privilege of selecting a Vice-Chairman and a Secretary." The motion was carried.

The reports from the local societies, through their presidents or representatives was the next order of business. The secretary explained that he had had this put on the program because he had been asked, during the year, for a full list of the local societies by a member of the Board of Medical Education and Licensure, and called upon Dr. D. P. Maddux, of Chester, a member of that Board, to explain the benefits of securing the co-operation of the local societies.

Dr. Maddux: The special reason that this list was asked

for by me was the fact that when the Board had occasion to make inquiries throughout the State in regard to the standing of applicants for medical licenses, the matter was always referred to the old school county societies, because we homœopaths had not the facilities for gaining this information quickly. The preparation of a book containing a list of our local societies and some account of their proceedings would be of value in demonstrating that we have these representative organizations, so that the judgment of homœopathic physicians may receive proper consideration. I think that it is a good thing to have a place on the program at our annual meeting where the representatives of the local societies may report any matters that have special interest or appeal to them; as I feel that this may bring something of value to us from the local societies, and will make each local society feel that it has a distinct relationship to the State Society.

Dr. G. A. Sayres, Lancaster: I should like to add a few words to what Dr. Maddux has said. An inquiry of that sort came to Lancaster, and was referred to the secretary of the old school county society. He did not know the person inquired about and, consequently, consulted a member of the Homœopathic County Society. We, of course, told him what we knew; and he sent a report to the secretary of the old school board. If our homœopathic society were recognized, we could send in our report ourselves, directly, and not through the old school society's secretary.

Dr. W. A. Stewart, Pittsburgh: It is a question whether the Homœopathic Medical Society feels the importance of our work. During the winter it was necessary for us to get some information that seemed very vital to the medical profession, and we tried to get it through the Homœopathic Allegheny County Medical Society. The president sent a letter to me, as a member of the Board, as much as to say that the Society washed its hands of the job and we had to get what data we needed from the old school county society. I think it ought to be emphasized that it is a part of each homœopathic medical society's duty to keep itself posted, so as to know what is going on and know when there are men that have no standing practicing in their midst. They should be willing to spend time and money in getting such data. If they do not feel their responsibility in these matters, the homœopathic organizations will be practically nil as a force. I think that the president

should emphasize the fact to these societies that this work is most essential. We ought not to have to be humiliated by being compelled to appeal to our allopathic brethren for information of this sort.

Dr. Ashcraft: That is quite true; and it all the more strongly emphasizes the need for a House of Delegates to look after matters of vital interest to our profession. Your Board of Trustees went into the thing very carefully last night, and it seemed to be the consensus of opinion that we want to go into this for the very reasons that Dr. Stewart has outlined.

Dr. Metzger: I should like to make a motion that the secretary of the State Society be authorized to send a letter to the secretary of each of the thirty-seven local societies, stating the fact that this matter has been brought before the State Society; that we desire a report from each local society each year; and that throughout the year, they should take cognizance of such things as are important to the State Society or to the profession in general.

The motion was carried.

In the absence of Dr. Chas. A. Ley, chairman of the Membership Committee, the report was given by Dr. P. A. Tindall, of Philadelphia, who stated he had received no report from Dr. Ley, but that the applications for membership with the necessary dues had been received from the following:

- Frank H. Widman, 1637 Girard Ave., Philadelphia.
- James B. Bert, 2506 N. 11th St., Philadelphia.
- D. Lafayette Snyder, 1635 Girard Ave., Philadelphia.
- M. W. Benjamin, 3602 Old York Road, Philadelphia.
- Charles H. Robelen, 1200 S. 52d St., Philadelphia.
- LeRoy Walker, 2258 N. 13th St., Philadelphia.
- Edwin G. Cowperthwait, 1819 Venango St., Philadelphia.
- W. B. G. Terry, 727 S. 60th St., Philadelphia.
- H. Leslie Fry, 3509 Baring St., Philadelphia.
- F. Traganza, 2009 N. 2d St., Philadelphia.
- Chas. W. Seybert, 5624 Girard Ave., Philadelphia.
- C. B. B. Vedder, 1016 S. 58th St., Philadelphia.
- Thomas W. Clark, 6801 Woodland Ave., Philadelphia.
- E. P. Anshutz, care Homœopathic Recorder, Boericke & Tafel, Philadelphia.
- Wm. H. Corson, Collegeville, Pa.
- Robert L. Walker, Walter's Park, Pa.
- W. J. Felsburg, Jr., care Woman's Homœopathic Hospital, 20th and Susquehanna Ave., Philadelphia.

George J. Alexander, 1831 Chestnut St., Philadelphia.

It was moved and seconded that these applications be referred to the Board of Censors for their action. Carried.

Dr. Metzger read the following night letter from the Pennsylvania State Medical Society, in session at Pittsburg:

PITTSBURGH, Pa., September 23d, 1914.

PRESIDENT OF HOMOEOPATHIC MEDICAL SOCIETY OF PENNSYLVANIA:

The following is the text of a resolution passed unanimously by the Medical Society of the State of Pennsylvania. Kindly write me, address below, of whatever action you take, that we may work later in common at Harrisburg:

WHEREAS, The Optical Society of Pennsylvania propose to introduce a bill into the next Legislature to establish their own Board of Examiners in order that they may free themselves of the present regulations by the Pennsylvania Bureau of Medical Education and Licensure, and

WHEREAS, The passage of such a bill will not only give the Society of Optometrists the title of Doctor of Licentiate Optometry, without their undergoing any examination in anatomy, physiology and pathology, and

WHEREAS, In the opinion of the Attorney General of this State the so-called Optometrists are already practicing medicine under its present legal definition and therefore properly subject to the regulation of the said Bureau of Medical Education and Licensure, and

WHEREAS, This Society has since its inception stood for the highest ethics as well as the highest ability in those who wish to treat the ailments of the people of Pennsylvania, therefore be it

Resolved, That the Medical Society of the State of Pennsylvania do hereby protest to the Legislature of Pennsylvania, against the passage of such bill as proposed because of its danger to the health and welfare of the public.

Signed C. P. FRANKLAND,
121 South 16th St., Philadelphia.

It was moved by Dr. Hillegas that a committee of two be appointed by the chair and report at a later session of the same meeting. The motion was carried, and Dr. Ashcraft appointed

Dr. W. W. Speakman, Philadelphia, chairman, and Dr. H. M. Bunting, of Norristown.

The session adjourned at 12.25 P. M.

THURSDAY, SEPTEMBER 24, 1914.—AFTERNOON SESSION.

The meeting was called to order at 3.05 P. M. by Dr. Ashcraft.

The report of the committee appointed at the morning session to consider the communication from the Medical Society of the State of Pennsylvania was read by the chairman, Dr. Speakman, and was as follows:

The committee from the Homœopathic Medical Society of the State of Pennsylvania to which was referred the communication from the Pennsylvania Medical Society in reference to the licensing of optometrists, wish to report that it is in entire accord with the sentiment expressed in that communication and thus presents the following resolution:

Resolved, That in the judgment of this Society the power to grant a license to practice medicine or any of its branches is and should be vested solely in the Bureau of Medical Education and Licensure. Be it further

Resolved, That the Legislative Committee be instructed to oppose any bill in the Legislature creating a separate board for optometrists.

This report and resolution was adopted, and the secretary was instructed to communicate the information to the secretary of the Pennsylvania Medical Society at once.

BUSINESS SESSION, FRIDAY MORNING, SEPTEMBER 25

The meeting was called to order by Dr. Ashcraft at 9.50 A. M.

Under the head of unfinished business, Dr. Gilbert J. Palen, of Philadelphia, chairman of the Committee on the President's Address, read the following report:

REPORT OF COMMITTEE ON PRESIDENTIAL ADDRESS.

Your committee, appointed to report on the President's Address, begs leave to submit the following:

The committee feels that this Society owes Dr. Ashcraft a debt of gratitude for his untiring and most intelligent ef-

forts, during the year, directed in furthering the interests of the Society.

The work covered has been accomplished at a great sacrifice of his time and money, while, at the same time, he has held always as the end to be attained, the good of our Society.

We endorse emphatically Dr. Ashcraft's references to the excellent work being done by the State and City Boards of Health and also the work being done by the hospitals throughout the State.

The references, which the president makes, in regard to drugless healing, and especially concerning homœopathy as eulogized by members of the old school, are well worth the consideration of those who desire to see the standard of our school advanced and materially benefited.

His stand in regard to eugenics, alcohol, social evil, drug habit and child labor, your committee feels should be especially commended and should receive the hearty endorsement of all the members.

As physicians, we recognize our responsibility as protectors of the public.

Dr. Ashcraft calls attention to the falling off in interest in certain localities and suggests measures for the betterment of the same. To create more enthusiastic work along these lines, your committee would especially endorse his scheme for reorganization by the formation of a House of Delegates, in order to increase the efficiency of the Society.

The committee agrees thoroughly with Dr. Ashcraft that the president of this Society should always be one who is in touch with the medico-political affairs of the day; one who will visit every local society at least once during his term of office; one who will in short devote, as his duty, a large portion of the year's time to the interests of this organization. Your committee feels that this should also apply to every office holder of this organization; that every officeholder in the Society should give up his time, brain and money to the furtherance of the same; that if he cannot do this he should not accept the office.

The suggestion of two meetings in the year should have the consideration of this Society.

The committee heartily endorses the idea of a publicity officer and would suggest that the faculties of our institutions should co-operate and sustain the efforts of this agent by visiting more frequently the medical meetings throughout the State, than has apparently been their custom in the past.

We are gratified by the statement concerning the high standard maintained by the Hahnemann Medical College and by the statement concerning the efficiency of its teaching corps.

There has not, in the past, been given sufficient or adequate publicity to the excellent work which the college has done.

The president's remarks on co-education are strongly concurred in by this committee. Why should not the doors of our college be thrown open to women?

In conclusion, the committee would congratulate Dr. Ashcraft on his most able and scholarly address, which clearly shows a wide knowledge and a keen insight into the affairs of our Society.

GILBERT J. PALEN, *Chairman.*

WILLIAM W. SPEAKMAN.

H. M. BUNTING.

Committee.

Upon motion the report was adopted.

The report of the Board of Censors was read by Dr. R. S. Marshall, the acting chairman. In the absence of all three regular members of the Board of Censors, the president had appointed the following to serve in that capacity during this session: Dr. R. S. Marshall, chairman, Pittsburgh; Dr. R. L. Piper, Tyrone, and Dr. H. S. Weaver, Philadelphia. The report was as follows:

The Board of Censors respectfully recommend the following persons for election to membership:

Doctors Charles H. Robelin, A. E. Anshutz, Edwin G. Cowperthwaite, LeRoy J. Walker, W. J. Fisher, Frank H. Widman, D. Lafayette Snyder, James W. Bert, M. W. Benjamin, Harry F. Hoffman, W. B. G. Terry, H. Leslie Frye, F. Traganza, Charles W. Seybert, Clarence V. B. Vedder, George J. Alexander, Thos. W. Clark, Gouveneur H. Boyer, C. B. Reitz, Robert L. Walker, W. H. Corson.

Signed,

R. S. MARSHALL, *Chairman.*

R. L. PIPER.

H. S. WEAVER.

Board of Censors.

Upon motion this report was adopted and the gentlemen named were elected members.

Dr. Ashcraft asked whether Dr. Hillegas had any further report to make from the Board of Trustees.

Dr. Hillegas replied that there was no further report, but that he wished to submit the following two amendments to the By-Laws for action in 1915: Amend the fourth sentence in Section 2 of Article IV by changing the word "January" to "November," the effect being to make the officers assume their

duties on the first of November succeeding their election, instead of the first of January following.

Amend Article VII, Section 2, to read: "Active members shall pay annually, in advance, the sum of five dollars towards defraying the expenses of the Society," the idea being to have two dollars go towards paying for the Transactions, and three dollars for dues.

At 11 o'clock, the president stated that the nomination of officers for the ensuing year was in order. The following nominations were made:

President, B. F. Books, Altoona, Pa.

First Vice-President, R. L. Piper, Tyrone, Pa.

Second Vice-President, J. Edgar Belleville, Philadelphia.

Secretary, Irving D. Metzger, Pittsburg, Pa.

Treasurer, Ella D. Goff, Pittsburg, Pa.

Necrologist, W. Franklin Baker, Philadelphia.

Censor, W. W. Sloan, Philadelphia.

State Society Editor, Gilbert J. Palen, Philadelphia.

Trustees, Ralph Bernstein, Philadelphia; Leon T. Ashcraft, Philadelphia; W. A. Stewart, Pittsburgh.

The business meeting then adjourned.

FRIDAY, SEPTEMBER 25, 1914.—AFTERNOON SESSION.

The meeting was called to order by Dr. Ashcraft at 3 P. M.

Dr. Gilbert J. Palen, of Philadelphia, proposed for honorary membership in the Society the name of Dr. DeWitt Wilcox, president of the American Institute of Homœopathy. The nomination was seconded. Dr. Ashcraft then explained that the carrying of this motion did not mean the election of Dr. Wilcox at that time, as, according to the By-Laws, a number of months must elapse from the time honorary members are nominated until their election. He then called for a vote, and the motion was carried.

Dr. Ashcraft introduced Dr. DeWitt G. Wilcox, who spoke as follows:

"I do not wish to interfere with your program, and did not expect to be called on to speak to you to-day. I want to say that you and your president have honored me above my just deserts. I can only excuse your doing so on the basis of your extreme good nature. I have known for a long time of Dr. Ashcraft's ability as a teacher and instructor but have never been able to understand how he has succeeded in driving home

the truths of the profession to his students as he has done; but I now find that he does it with a hammer."

Dr. Metzger read the following two applications for membership in the Society:

Dr. Robert Walter, of Walter's Park, Wernersville, endorsed by Dr. D. C. Kline, of Reading; and Dr. William H. Corson, of Heckville, endorsed by Dr. Howard Terry, Jr., of Phoenixville, and Dr. G. Harlan Wells, of Philadelphia.

It was moved and seconded that these applications take the usual course. Carried.

Meeting then adjourned.

SATURDAY, SEPTEMBER 26, 1914.—MORNING SESSION.

The meeting was called to order by Dr. Ashcraft at 10.05 A. M.

Dr. W. A. Stewart, of Pittsburg, chairman of the committee appointed to audit the treasurer's accounts, reported that the auditors had examined the books of the treasurer and found them correct. It was moved and seconded that the report be accepted. Carried.

Dr. R. S. Marshall, chairman of the temporary Board of Censors appointed by the president to serve at this session, reported that the board wished to recommend the following candidates for election to membership in the Society: Dr. Robert Walter, of Walter's Park, Wernersville, and Dr. William H. Corson, of Collegeville.

On motion this report was adopted, and Dr. Ashcraft declared these two gentlemen elected.

Dr. Ashcraft then turned the meeting over to Dr. R. V. White, of Scranton, chairman of the Bureau of Surgery, Gynecology and Obstetrics.

At 11 o'clock the election of officers was taken up; as it was the hour set for this in the By-Laws.

The secretary read the names of the nominees, there being only one person nominated for each office to be filled.

Dr. Heimbach made a motion that the secretary be instructed to cast a ballot for the election of these nominees. The motion was seconded by Dr. Fischer, and carried.

The chair then declared the following elected for the ensuing year:

President, Dr. B. F. Books, of Altoona.

First Vice-President, Dr. R. L. Piper, of Tyrone.

Second Vice-President, Dr. J. Edgar Belleville, of Philadelphia.

Secretary, Dr. Irvin D. Metzger, of Pittsburg.

Treasurer, Dr. Ella D. Goff, of Pittsburg.

Necrologist, Dr. W. Franklin Baker, Philadelphia.

Censor, Dr. M. W. Sloan, Philadelphia.

State Society Editor of *THE HAHNEMANNIAN MONTHLY*, Dr. Gilbert J. Palen, Philadelphia.

Trustees, Drs. Ralph Bernstein, Philadelphia; Leon T. Ashcraft, Philadelphia, and W. A. Stewart, Pittsburg.

Dr. R. L. Piper, of Tyrone, the newly elected first vice-president, then invited the State Society to meet at Altoona in 1915, assuring the members of a warm welcome, should the Board of Trustees decide to have the Society meet there.

Dr. Ashcraft said that he believed it was the custom of the Society to leave the selection of the place of meeting to the Board of Trustees.

Dr. Metzger replied that this was the usual custom, but that the place had sometimes been settled upon in an open session. He then stated that he had received a letter from the Board of Trade of Reading, inviting the Society to meet there. The invitation did not come from the physicians of Reading, but met with their approval.

SATURDAY, SEPTEMBER 26, 1914.—AFTERNOON SESSION.

The meeting was called to order by Dr. Ashcraft at 2.45 P. M.

Dr. Gilbert J. Palen, of Philadelphia, then read the following report of the committee appointed to consider the recommendations contained in the president's address, especially concerning the institution of a House of Delegates:

REPORT OF COMMITTEE TO CONSIDER SPECIAL METHODS FOR FORMING A HOUSE OF DELEGATES.

Your committee, appointed to take under special consideration methods by which a House of Delegates might be created, desires to state that it regrets the basic organization of the local medical societies of our school in this State, does not readily lend itself to an immediate adjustment along these lines.

This committee, in common with the president and many of

his predecessors, feels that the efficiency of our school would be much enhanced by following the plan of organization which the old school has demonstrated to be so successful.

By general consent the county medical society has become the recognized unit of representation within that body. Unfortunately, so many of the local medical organizations of our school, in this State, have been formed without this thought in mind. For instance, we have no official medical society in the county of Berks, this county being presumably represented by the Hahnemannian Society of Reading and, in numerous other instances, we have local societies including members from various counties, the name not indicating the county represented.

While it may not be feasible to immediately form local organizations in each county we do regard it important that active measures be taken looking toward the formation of local societies representing each county in this Commonwealth and the names might be so adjusted so as to indicate that fact.

This committee would respectfully suggest that the president be authorized to appoint a committee of five members to render operative the details of this suggestion and that this committee be empowered to appoint local representatives in the various counties.

We would recommend, provided the above suggestions can be made operative by the time of the next annual meeting, that the Trustees be authorized to submit and publish such alterations or additions to the By-Laws as may be needful, so that official confirmation may be made at the next annual meeting.

GILBERT J. PALEN, *Chairman.*

D. P. MADDUX.

Committee.

It was moved and seconded that the report of the committee be approved by the Society. Carried.

Dr. Metzger offered a motion to thank Manager Spencer, of Galen Hall, for the interest he had manifested in the Society by providing such excellent facilities for holding the various sessions, and for his genial hospitality to the members of the Society while residing in his hostelry.

The motion was seconded and carried.

Dr. Ashcraft directed the secretary to convey this expression of their appreciation to Manager Spencer, and then thanked the Society for their interest in the proceedings and the support that they had given the chair in performing the duties of his office.

Dr. Maddux stated that he had heard from the members of

the Society many expressions of gratification at the able manner in which the president had arranged everything leading up to the session, and expressed his own appreciation.

Dr. Ashcraft thanked Dr. Maddux and the members of the Society. He then declared the Fifty-first Session of the Homœopathic Medical Society of the State of Pennsylvania concluded, after a motion to adjourn should be made and carried. This was then done, and the meeting adjourned *sine die* at 3.50 P. M.

INFLAMMATORY DISEASES OF THE TONSILS.

BY

CHARLES H. BEEBE, M.D., PHILADELPHIA.

Read before the Carl Vischer Medical and Surgical Club, Philadelphia, Pa.

To obtain a better understanding of diseases of the tonsils it is well to get a knowledge of their anatomy.

The tonsils (amygdalae) situated in the triangular spaces between the anterior and posterior palatine folds, on a level with the angle of the lower jaw, and bounded in front by the tongue, are almond shaped bodies composed of lymphoid tissue bound together by fibrous tissue and firmly attached to the base of the triangular space between the pillars. The normal size is about three quarters of an inch by one and a half inches, the longer diameter being vertical. The special anatomy of the tonsil, as given by B. Bryson Delavan, is as follows:

"The surface of the tonsil is perforated by varying numbers of slit-like and circular depressions—the common orifices of the system of cavities which it contains. In man, this system of cavities may be considered as a multiplication of single lingual follicular glands to the number of from eight to eighteen, the interval between each gland forming a lacunae or crypt. There is also in the interior of the tonsil, single layer cavities each of which includes several follicular folds and procures their common discharge at the periphery. The crypts of largest size and greatest depth are filled more or less with a substance composed of fat molecules, loosened pavement epithe-

lium, lymph corpuscles, small molecular granules, and cholesterol crystals."

Observations of more recent date tend to show that the structure of the tonsil is a mass of lymphoid tissue presenting on its outer surface from five to ten orifices leading down into blind pouches or pockets. According to Retterer the development of the tonsil in man consists in an involution of the epiblast into the hypoblast. From this single invagination, secondary invaginations occur into the surrounding tissue. As development progresses, the hypoblastic layer gradually grows in between these involutions of the epiblast, separating them one from another. The basement membrane of the epiblastic layer quite early during the process is lost, or so fused with the hypoblastic cells as to be indistinguishable. As development proceeds, the hypoblastic elements penetrate between the epiblastic involutions, separating them from each other, and also penetrate between the individual cells: gradually, portions of this hypoblastic tissue become condensed and give rise to the lobular structure of the tonsil—this condensation or contraction taking place in the peripheral parts. As the developing tissue becomes more and more consolidated, epithelial cells become compressed to such an extent that they undergo a retrograde change or fatty degeneration and finally disappear, leaving empty spaces which are termed the "lacunae." Except in early foetal life, the mass of the tonsil is made up of hypoblastic tissue, consisting of cells round, elongated, or stellated and appearing under the microscope as lymphoid tissue.

The lymphoid tissue so markedly expressed in the faucial region, is but part of a chain of similar tissue which extends across the base of the tongue and lateral walls of the pharynx and nasopharynx until the vault of the pharynx is reached, in which situation it is again expressed more fully in the tonsil of Luschka, or third tonsil. This chain of lymphoid tissue is sometimes spoken of as the "lymphoid ring." Waldyer. Externally the tonsils are in relation with the superior constrictor muscles of the pharynx, outside of which are the external and internal carotid arteries, the internal jugular vein, and the glosso-pharyngeal and pneumogastric nerves.

The relation of the tonsils to the internal carotid artery "(as given by Delavan)" are not so intimate as commonly supposed, for between the lateral wall of the pharynx, the internal pterygoid and the upper cervical vertebrae, there is a space filled

with cellular tissue, the pharyngomaxillary interspace, in the posterior part of which are located the large vessels and nerves, and which lies almost directly backward from the pharyngopalatine arch.

The tonsils correspond to the anterior part of this interspace, so that both carotids are behind it—the internal carotid about three quarters of an inch and the external carotid about one inch distant from its lateral periphery.”

FUNCTION OF THE TONSIL.

Wright (*Laryngoscope*, May, 1909,) in several publications, gives his views concerning the function or physiology of the tonsil and asserts that we are unable to describe the function or physiology of the tonsil as these terms are ordinarily used, but rather to speak of the tonsil in its relation to immunity and infections. His reasoning is based upon deductions drawn from his own experimental studies in pathology compared with similar phenomena in biology and physics.

He contends that the selective action of the epithelium of the tonsil upon dust and bacteria whereby the bacteria at times are prevented from passing and at others are allowed to pass freely into the lymph channels, is not fully explainable from the laws of immunity, but rather that we are dealing with living matter which obeys the laws of heredity and of involution, and that adaptation by natural selection is the only explanation why the protoplasm of the epithelial cells of the tonsillar crypts acts in the way it does. Clinically it has been long known that infectious germs are found in tonsillar crypts of healthy individuals, and that auto-infection is probably essential to induce follicular tonsillitis, this is preceded by disturbance of the sympathetic nerve, induced by exposure, fatigue and various functional and systemic disorders and diseases; primary tuberculosis of the tonsils is believed to be comparatively rare. Under normal conditions bacteria do not penetrate the epithelial layer of the tonsil in sufficient numbers at least to set up disease unless the epithelium is denuded or broken.

Acute infection of the tonsillar and peri-tonsillar tissue may be divided into four classes:

- (1) Acute peritonsillitis (quinsy).
- (2) Acute lacunar (cryptic or follicular).
- (3) Acute ulcerative tonsillitis.

(4) Acute membranous tonsilitis.

Etiology, the exciting cause is direct infection with pathogenic micro-organisms, no distinct type of organism is peculiar to tonsillar infections although the streptococcus pyogenes virulens is most common, but may be associated with pneumococci or staphylococci.

Tonsilitis is most frequent in persons between the ages of twelve and thirty, and especially of those of a rheumatic habit and with hypertrophied tonsils. The inflammation usually involves to a greater or less degree the pillars of the fauces and uvula. They are red, swollen, and the uvula elongated and troublesome. The attack may terminate in resolution, ulceration, abscess, or hypertrophy.

HYPERTROPHY OF THE TONSILS.

Synonyms:—Enlarged tonsils; chronic tonsilitis; follicular tonsilitis, or lacunar tonsilitis.

Pathology:—Hypertrophy of the tonsils is a true connective tissue hyperplasia. The increase and induration of the connective tissue is manifest in some tonsils at the time of the excision by the resistance to the passage of the blades of the tonsillitome, but in most cases they are spongy and yielding. The crypts are expanded, the walls tumefied. They are often filled with cheesy masses sometimes mixed with calcareous concretions.

Etiology:—Hypertrophied tonsils are found in the very young, but the larger number of cases are seen between the ages of ten and twenty years, and the next largest under ten years. The rheumatic habit; living in damp, cold atmosphere; recurring attacks of inflammation, the throat complications of the eruptive diseases, diphtheria, scarlet fever, syphilis, and the strumous diathesis are all productive of conditions that predispose to increase in size of these glands.

Symptomatology:—The appearance of a child with enlarged tonsils which suggests the nature of the trouble and especially if complicated with adenoids. The under jaw drops, the mouth remains continuously open, the eyelids droop, and the face is expressionless and suggestive of dull intellect; during sleep the respiration is noisy and of a snoring character.

Associated with hypertrophied tonsils in large proportion of children so affected will be found enlargement of Luschkas

tonsil, or adenoid vegetations in the vault of the pharynx. In these associated diseases with nasal obstruction by the adenoids and the blocking up of the fauces with the oral tonsils, the aëration of the blood is seriously interfered with. Inspection of the throat reveals the tonsils tumefied and at times so enormously enlarged as to lie in contact with each other. Treatment in enlarged hypertrophic or lacunar tonsils,—removal. The tonsil should be removed in its entirety, separated from the pillars and removed with a tonsillotome, or snare or if submerged, dissected and taken out with a punch or snare or tonsillotome. We have not had much bleeding as a rule and what we have had have always been able to check with pressure, always having a tonsillar needle at hand if needed. We usually remove the adenoids, if present after the tonsillar operation; and the effect on most children is a general improvement in all their conditions. They usually become brighter, livelier, and better scholars and many old symptoms, like some ear troubles and nocturnal enuresis, disappear. Peritonsillar abscesses must be incised freely. The other conditions of acute tonsillitis are to be treated with the indicated remedy and applications to the throat and pharynx.

Before closing I would like to say one should make a thorough examination of the tonsils. We should have a small curette, also a tonsil holder, or hook to lift the tonsil out from the pillars as in many of the submerged tonsils we cannot see the existing condition. On lifting the tonsil out we often see cheesy exudation from the crypts. Any large tonsil is pathologic and must be thoroughly examined.

Hypertrophied glands upon the post-pharyngeal wall is generally indicative of the presence of enlarged tonsils and adenoids. Time will not allow of going into the malignant and semi-malignant diseases of the tonsils.

AN INDICATION OF HEREDITARY SYPHILIS IN CHILDREN.—Ferreiroa reports ten cases in which hereditary syphilis was established by Sisto's sign. This consists in the almost constant crying of nurslings, especially at night. This crying is often the only sign, in the absence of otitis and gastric disturbances, pointing to the existence of hereditary syphilis. The crying is caused by pains in the epiphyses and cartilages. The rapid improvement from mercurial treatment indicates the correctness of the assumption. It is necessary in such cases to remember that hereditary syphilis may be present.—*Abstr. Zentralbl. f. Gyn.* 1914—108.

EDITORIAL

THE PREVENTION OF CANCER.

THE steadily increasing number of deaths each year in the United States from cancer has given rise to a great deal of concern on the part of medical men and others interested in public health, and extraordinary efforts have been made to discover the most practical means for reducing the mortality rate from this disease. So far, all efforts to discover the direct cause of cancerous growths have failed and consequently no therapy based upon a knowledge of the true etiology has as yet been practical. In general, it might be said that our most effective therapeutic procedures at the present time are based upon removal or the destruction of the growth.

During the year 1913 about seventy-one thousand persons died in the United States from cancer in the various portions of the body. Approximately forty per cent. of these growths involved the stomach and liver; thirteen per cent. the peritoneum and intestines; fifteen per cent. the female organs of generation and about nine per cent. the breast.

On account of the unsatisfactory results obtained by present methods in the treatment of advanced cancerous growths, it is generally conceded that we must concentrate our efforts along the line of early recognition of the diseases if the mortality rate is to be materially reduced.

It is believed by competent authorities that if the public and profession were educated in regard to early signs and symptoms of cancer, its annual mortality rate would be reduced at least fifty per cent.

As regards cancer of the skin, of the lips, the tongue and other visible portions of the body, it should be borne in mind that there is always some external warning that can be seen or felt before any serious growth takes place. For example, warts, moles, unhealed wounds or sores, or thickened nodules under the skin, are all conditions that should be viewed with suspicion,

especially in persons past the age of forty. It is not wise to wait until the patient complains of pain at the site of such lesions before steps are taken to remove or heal them. The doctor should not regard such conditions as trivial but should observe the patient from time to time and at the least sign of any activity or spread of the external lesion, appropriate treatment should be employed.

Cancer of the breast occupies a prominent place in the death rate from this disease and the only safe rule for the physician to follow is to advise the removal of every growth in the female breast. It is probable that adherence to such a rule would reduce the death rate from this affection at least seventy-five per cent. It is true that some harmless growths would probably be operated upon if this policy were carried out; but as the operation is neither serious nor dangerous, the chances for the woman are much better than if the lump were allowed to remain until lancinating pains, swelling of the axillary glands and adhesions to the chest wall are allowed to develop in order to be sure the patient has an actual cancer. Cancer of the uterus can almost always be recognized in a stage where an operation can be successfully performed, provided the patients are educated to consult the physician upon the appearance of an abnormal vaginal discharge, especially if such a discharge be associated with disturbances in the act of urination. Such conditions particularly should be looked upon with suspicion if they develop about the time of the menopause, and the physician should never fail to make a thorough local internal examination in such patients.

The early recognition of cancer of the stomach, peritoneum and the intestines is always a difficult problem as the symptoms are often vague and indefinite. It is true that feelings of discomfort and a disturbed function are practically always present, but it is usually impossible to determine from the character of the sensations described by the patient, whether they should be ascribed to functional or organic changes. With the development of the various methods of testing the functions and of examining the secretions from these organs, however, a large percentage of these cases can be properly diagnosed, and great help may also be obtained in confirming the diagnosis by means of a radiographic examination of the abdominal organs. It is true that such examinations involve a good deal of time and expense and many patients object strenuously to such unusual pro-

cedures. It is the duty of the doctor, however, to explain to the patient that a snap diagnosis is of little actual value and that thorough examinations are necessary if he desires to be protected from cancer or other serious diseases.

Another word of warning should be spoken in regard to the importance of not being deceived by the temporary relief of pain or other symptoms incident upon the institution of palliative treatment in cases in which the diagnosis is in doubt. It is true that many patients are lulled into a sense of security in this way, but the conscientious physician should never be satisfied to rest upon such temporary relief if the suspicion of cancer exists in his mind.

The general experience of surgeons and of physicians proves that cancer always begins in a limited area, and there is always an interval between the development of cancer and its spread to adjacent tissues. This interval may be but a few weeks or it may be many months. No one can tell how soon the spread of the condition may begin and it is therefore imperative that efforts at exact diagnosis should be carried out early and thoroughly.

While the entire medical profession is looking forward with hope and expectation to the time when the cause of cancer will be definitely determined, and effective antitoxin or serum prepared for its treatment, we must recognize that no such ideal therapeutic procedure is available at the present time and we must rely mainly on the education of the people as to the signs of cancer while it is still a purely local lesion, and to the importance of immediate examination and treatment while in the most favorable stage for cure.

G. H. W.

THE INFLUENCE OF SCOPOLAMIN UPON LABOR PAINS.—Zinsmeister has observed 37 normal parturients delivered while under the action of scopolamin and kindred alkaloids, has studied the activity of the contractions and reaches the following conclusions: Although it is possible to observe in some cases an influence upon the activity of the uterine contractions, yet in most cases this was so slight as not to have affected the course of labor. On the other hand, these observations are counterbalanced by a series of cases which displayed a distinct improvement in the activity of the contractions. It is to be expected from more extended experience that many an undesirable effect associated with this method will ultimately be obviated.—*Abstr. Zentralbl. f. Gyn.* 1914—105.

GLEANINGS

THE TREATMENT OF PHTHISIS BY INDUCED PNEUMOTHORAX.—Writing in the *Liverpool Medico-Chirurgical Journal* for July, 1914, Rundle tells us that twenty-one patients have received treatment by this method. The total number of injections given has been about 250. On no occasion has any complication of a serious character resulted from the operation. One patient was suffering from advanced disease of both lungs at the time of the first injection. The increased dyspnea resulting from the operation compelled the writer to abandon the treatment. Five patients with involvement of the greater part of one lung have been under treatment for from six to nine months. In these instances a cure is of course impossible, but it is noteworthy that in only one of them has there been any marked advancement in the physical signs since the beginning of the treatment. A fatal termination will eventually ensue, but the writer believes it to have been delayed. The improvement in this type of case has been accompanied by a very decided fall in the temperature range and volume of sputum. In one instance an obstinate and recurring hemoptysis appeared to be brought under control.

The remaining fifteen patients presented types of disease ranging in severity from the above to a moderate involvement of one lobe only. The extent of progress in these cases must always be largely a matter of opinion, but probably those who have followed the progress of the patients under treatment will agree that a greater and more sustained improvement has taken place than might have been expected as a result of treatment by other methods, not excepting the tuberculin.

The following are amongst the difficulties and dangers which may be met with:

The presence of adhesions making pneumothorax impossible. In such cases it is inadvisable to attempt to break down the adhesions by using pressure, although Saugman has recommended this. In one of the writer's cases nitrogen under pressure produced subdiaphragmatic emphysema which extended through the inguinal canal to the scrotum. During a second attempt the gas appeared along the great vessels of the neck, producing dysphagia by pressure upon the esophagus. If no free pleural space can be found, it is wiser to abandon the attempt.

Woodcock and others perform resection of the ribs in cases of this kind; the resulting collapse is then of course permanent. In view of the possibility of involvement of the other lung, it seems questionable whether one is justified in producing a final and total collapse of the affected lung. Evisceration of the lung is another expedient.

Faulty technique may produce pyopneumothorax, as in cases related by Brauer and Hammen. Cases of air embolism have been reported, but this

danger should be obviated by a proper use of the manometer. Sudden death without obvious cause has been noted in more than one instance: this phenomenon is in keeping with that observed in rare instances as the result of such simple operations as tapping a hydrocele. As far as the writer is aware, no satisfactory explanation of this is forthcoming.

Dyspnea, with sometimes marked distress, follows the injection. In one of the writer's cases this condition was extreme and necessitated drawing off a portion of the gas with an aspirator.

By far the greatest obstacle to treatment has been, in the writer's experience, the pain incidental to the insertion of the needle. This pain is often most acute, it is not relieved by the use of the common local anodynes, and is at the maximum when the needle is piercing the pleura. Forlanini, in describing his method of simple puncture (the method the writer employs), states that it causes the patient very little pain, and that one may with good grace go on to make a number of punctures if the first be unsuccessful. The writer has not met a patient who would submit to this, and he believes that the proportion of individuals selected for treatment is restricted for this reason, rather than by consideration of the extent of the disease and clinical suitability. The fall of temperature and decrease in the amount of sputum, results which are fortunately within the observation of the patient, will often reconcile him to a prolonged course of treatment.

A local anesthetic to be of service must be deeply inserted, sufficiently to involve the pleura. This is in itself painful, and unfortunately deprives the patient of that sensation which is a very useful guide to the operator, when the needle is piercing the pleura.

In conclusion, the writer's feeling is that the induction of pneumothorax should not be undertaken as a routine treatment in—

First, very early stages with a favorable prognosis. In these the outlook is sufficiently good without subjecting the individual to the distress of a decidedly painful operation.

Secondly, very advanced cases, with involvement of both lungs. Here the writer believes that the additional dyspnea resulting from the lung collapse may materially hasten the end.

On the other hand, the writer is very strongly of the opinion that no case of phthisis of moderate severity should be allowed to progress to a fatal termination without a trial of this measure. By a case of moderate severity he means one of that type so familiar to us all, where, although the involvement of the lung is partial, and unilateral, there is a persistent daily pyrexia, with perhaps increasing emaciation, anorexia, copious sputum, and loss of weight. When a patient of this class has had the advantage of sanatorium treatment, without improvement, then the writer believes he is justified in boldly placing the treatment by artificial pneumothorax before his patient, as offering probably the only chance of arrest.—*Therap. Gazette.*

ALBUMIN IN SPUTUM AND ITS RELATION TO PULMONARY DISEASE.—G. R. Cellendar makes the following statements: 1. Albumin is not present in the sputum in all cases of active pulmonary tuberculosis. A case has been considered active if clinical signs indicated it and if bacilli

were found within one month of the examination for albumin. As a corollary to this conclusion it may be said that the proportion of negatives in the active cases is sufficient seriously to affect the value of the reaction from a diagnostic standpoint. 2. An increase in globulin, accompanied by a decrease in albumin is a favorable prognostic sign. 3. Albumin is present in the sputum in cases of pulmonary syphilis, and is therefore not a means of differential diagnosis between that disease and phthisis. 4. As a rule, though there are exceptions, the albumin content corresponds to the amount of activity. 5. Fibrous cases with moisture, but no active tuberculosis in the lungs, do not show appreciable amounts of albumin in the sputum. Thus the determination of albumin may be of aid in the differential diagnosis between moisture due to tuberculous activity and that due to other causes. It seems to the author, from the diverse results met with, that it must be concluded that for diagnosis, direct or differential, albumin in the sputum, either quantitatively or qualitatively determined, while possibly acting to substantiate other methods, is of very little value alone. As in many other reactions, a positive result is of more value than a negative.

A STUDY OF 150 CASES OF TWILIGHT SLEEP.—J. Heller presents this report, remarking that the technic practised at Freiburg was followed without deviation. In summarizing the results he states that in 122 cases, or 81.3 per cent., he succeeded in obtaining a complete amnesia and an almost equal degree of analgesia. All that occurred during the time the patient was under the influence of the drugs was wiped out of her memory. In thirteen, or 8.7 per cent., he got analgesia without amnesia; these were started somewhat too late. In his opinion, amnesia, while present in the great majority of cases, is not essential. The analgesia case without amnesia seems to him the more ideal, for not only does that labor appear more natural, but the patient can make good use of her abdominal muscles to shorten its duration. In fifteen cases, or ten per cent., he failed to obtain any marked results. With present experience it is quite possible to reduce the number of failures to a smaller figure, but, since the sensitiveness of the nervous system varies in different individuals, as does the susceptibility to drugs, there will always be some cases which will not be influenced by the drugs unless these are carried beyond the point of safety. There were 152 children (two of the births being twins), and not one was stillborn, that is, failed of respiration. Three, however, died within a short time after birth. One, in the eighth month of gestation, with a spina bifida, died three hours after birth; a second died three days later from melæna neonatorum with a family history of bleeders, and the third one from subdural hemorrhage. No post mortem examination could be obtained, but even if we should credit this death to twilight sleep, the child mortality, 0.6 per cent., would compare more than favorably with the ordinary fetal mortality of 1.5 per cent. The author regards this small series as proving that, judiciously used, the method is capable of relieving pain in ninety per cent. of cases, and that it is free from any danger to life or health of mother or child.

TREATMENT OF PRURITUS ANI.—J. Cropper (*British Med. Journ.*, May 2, 1914).—Any well-marked case of pruritus ani always exhibits one or

more tiny cracks or fissures of the skin round the anus, which may be intensely painful and are always very irritable and difficult to cure. From time to time the trouble is aggravated by the occurrence of one or more perianal abscesses which cause more or less trouble according to their size and depth. Pruritus ani is mainly a disease of cold climates. A dry climate is worse than a moist one, and a rich diet is a predisposing factor.

Two remedies are of real and lasting benefit. The first is tincture of iodine (*B. P.*), which may be used in half or full strength with impunity. It is not at all irritating to mucous membranes, and the slight pain, caused if there are open skin cracks, is quickly over. A patient who had got into a very bad state with numerous skin cracks, wash-leather appearance of the skin, and not infrequent perianal abscesses, and loss of sleep, found that, used thrice weekly, this remedy enabled him to sleep all night, and, in fact, made him comfortable. It should not be used so as to excoriate the skin. Even better than tincture of iodine is compound tincture of benzoin. Mildly styptic and really antiseptic, its action may be largely mechanical, and give the necessary rest to the affected part. Within two minutes or so the spirit in the tincture evaporates, and then all temptation to scratch the part is over. It is cleanly, and does not soil the linen as most ointments do. It may be used twice or thrice daily, and never irritates. Samples vary greatly in color from a light tint to a dark brown, and also in consistency; but they seem to have the same effect, though, perhaps, the darker and thicker is the most useful. It is necessary to use the balsam before a hot bath if the water is very hard, prolonged hot baths in hard water being very injurious.

FEEDING THE PEOPLE IN WAR TIME.—Professor Rubner (*Deutsche medizinische Wochenschrift*, October 1, 1914) outlines the sources of England's food supply. She receives dairy products from Holland and the Scandinavian countries and also from Switzerland via France. From Canada she also receives cheese, while meat and cereals are mostly imported. England engages in manufacture and commerce rather than agriculture because gains are more rapid. With Germany it is otherwise. She has 11,000,000 cows and the daily per capita production appears to be sufficient for the needs of the consumer. Germany is naturally a great meat-eating country, consuming about 115 pounds annually per capita, about half of which is pork. War interferes somewhat with the supply of poultry, eggs, and fish, but not directly with the meat supply proper. Shortage in other directions should be readily made up from the markets of the neutral countries, which happen to include the very ones which have supplied England with poultry, eggs, and dairy products. In regard to cereals enough wheat and rye alone are raised in Germany to support the country. The potato crop this year has been very satisfactory. The percentages used as food cannot be increased by cutting down the manufacture of spirits, for alcohol may become in great demand to replace gasoline as fuel. Germany need not worry about the shortage of fruits and vegetables. The problem of animal fodders is not so simple, for this has ranked in part among the imports, but at present the country has three and a half million tons on hand, and as fodder material is much the same as the distillers' raw material, some diversion of supply from man to animal is possible. In regard to

brewing, animals get the refuse while man gets the nutriment in the beer. If pigs, for example, are fed directly with barley, but a small production of the food value of the latter is realized in the gain of weight by the animal, for the latter uses up most of it as mere fuel. The people will have plenty of opportunity for economizing by cutting down the meat consumption, by eating the coarser forms of bread, by restrictions on the use of butter and sugar, by using the cheaper milk products (buttermilk, curds), by eating more legumes, etc., etc. This self-denial naturally has the effect of lowering the market prices.

CANCER OF STOMACH.—The 1,000 cases of cancer analyzed by Friedenwald occurred in 10,416 patients affected with various gastric disturbances (9.6 per cent.); the maximum liability to the disease lies between the fortieth and sixtieth year (65 per cent.); the greater proportion of cases occur in males; 588 males to 412 females. An hereditary history of cancer appearing in various portions of the body occurred in 104 of the 1,000 cases (9.4 per cent.). A definite history of trauma was elicited in 19 cases, in 6 of which there had been blows on the abdomen. In 229 cases in which hemoglobin estimations had been recorded, anemia was present in 189 (82 per cent.). The average of the hemoglobin estimations was 43. Chronic endocarditis was present in 114 cases (11.4 per cent.); arteriosclerosis in 696 (69.6 per cent.) of all cases. Of the 132 cases in which blood-pressure examinations were recorded, 121 (91 per cent.) present readings of 170 mm. or more. Albumin was present in 401 (55.9 per cent.), and albumin and casts in 334 (46.4 per cent.).

In the 1,000 cases of cancer there was a history of some previous digestive trouble in 232 cases (23.2 per cent.). Seventy-three cases gave a definite history of former gastric ulcer. A history of former indiscretions in diet was obtained in 321 instances (32.1 per cent.); a history of alcoholism was obtained in 152 instances (15.2 per cent.). A history of syphilis was obtained in 79 instances; tuberculosis of the lungs was present in 48 instances. Over 89 per cent of the cases presented an entire absence of free hydrochloric acid. Lactic acid was present in 601 instances, or 81.9 per cent. of the 733 cases in which the gastric secretion was examined. The Oppler-Boas bacillus was observed in 582 cases, or 79.3 per cent., of the 733 cases. It was found only in those instances in which lactic acid was observed. Sarcina were observed in 24 instances (32 per cent.). Visible blood was observed in the gastric contents in 129 instances (7.5 per cent.). Coffee-ground contents was obtained in 653 instances (61.8 per cent.). Roentgen-ray examinations were made in 32 instances, 8 cases presenting cancer at the cardiac region and 24 at the pyloric region. Anorexia and vomiting are most prominent symptoms, being present in 89 per cent. of cases. Hematemesis is present in 25 per cent of all cases and melena in 19 per cent. Occult blood appears in the stools in 92.5 per cent. The tumor was sufficiently advanced to be palpable in 72 per cent. of cases, but only in 30 per cent. of these cases within a half year of the first appearance of symptoms, while in 60 per cent. of cases this symptom was manifested after the first six months. Clinically in 60 per cent. of cases the cancer is located at the pyloric area, in 7 per cent. at the cardiac area, and in 30 per cent. there is a general involvement.

Operations were performed in 266 instances (26.6 per cent.). Of these 138 (51.8 per cent.) were exploratory operations. Gastro-enterostomies were performed in 98 (36.9 per cent.); gastrotomies in 25 (7.8 per cent.), and pylorectomies and gastrectomies in 9 (3.3 per cent.). Of these there is not one patient living. It is therefore evident that the early diagnosis of cancer of the stomach is still fraught with difficulty, and that until more certain methods are available exploratory incisions should be urged on all persons over 40 years of age having gastric symptoms which are not relieved after a few weeks' treatment, especially is this the case if there be some loss of flesh, an absence of free hydrochloric acid in the gastric contents, and occult blood in the stools. Inasmuch as in a certain proportion of cases gastric ulcers become cancerous, it is well in all operations for gastric ulcers to consider the advisability of performing excision or partial gastrectomy to prevent possibility of the transition of ulcer into cancer.

ON ERRORS IN DIAGNOSIS IN CONNECTION WITH DISEASES OF THE ABDOMEN.—Bland-Sutton (*Clinical Journal*, March 4, 1914) feels strongly that if surgeons investigated their patients with the same thoroughness that physicians do, errors in the diagnosis of acute abdominal disease would be fewer. He notes that mistakes are often made not from ignorance, but from not taking the trouble to examine the patient. Operations upon the abdomen are attended at times with what may be truly called dramatic surprises; some of them are connected with conception under conditions when it is least expected. He records the case of a young married woman, ill for many weeks, with an abdominal tumor, with fever, and exhibiting a large circular orifice with sloughing margins in the situation of the navel, and a black, offensive mass protruding through it. This black mass was the buttocks of an extra-uterine fetus, which was successfully extracted and the placenta removed piecemeal.

The author himself was asked to operate on a married woman, aged twenty-four, and removed a full-grown extra-uterine child, which was free in the abdomen. He had no doubt as to the correctness of the diagnosis, for the child could be felt moving freely about the abdomen. The uterus was empty; a soft, dome-shaped mass occupied the hypogastrium, and a venous hum could be easily heard over it on auscultation. When the abdomen was opened, omentum, stained with meconium, appeared. Sutton grasped the fetus and gently lifted him out of the belly, but he vigorously clutched the omentum, and it was necessary to gently extend his fingers in order to release it. The mother recovered, but the boy survived but two hours. The mother gave a history of a thirteen months' pregnancy. At the end of nine months she came in labor, but the pains gradually passed away. She kept well until the awful attacks of pain began, these due, according to the doctor, to the child striking the mother in the region of the liver, stomach, and diaphragm.

Displacement of viscera is a fertile source of errors in diagnosis. Attention was called to the fact that in about 25 per cent. of mankind the appendix is a pelvic organ; in such cases direct access to it, when inflamed or perforated, is obtained by means of a median subumbilical incision. Often it lies behind the ascending colon; in this position it is more easily reached by an opening in the ileocostal region. Sometimes it lies on the

ascending colon and its tip comes into relation with the gall-bladder. A rare anomaly is non-descent of the cecum, which then retains its fetal position under the liver. The rarest of all displacements happens when the small intestine, cecum and ascending colon are slung on a common mesentery. In this condition the cecum sometimes passes behind the mesentery, migrates into the left kidney pouch, and sets up intestinal obstruction of a very fatal kind. Wandering of the spleen leads to many doubtful diagnoses, and if enlarged it often descends into the pelvis and is mistaken for an ovarian cyst or a fibroid. This often leads to disaster, for when the splenic enlargement is due to leukemia and an operation is undertaken, the patient usually dies within twenty-four hours. If the case be enlargement not associated with leukemia, errors in diagnosis are of little importance, because the removal of such a spleen is invariably followed by good consequences. The caution of surgeons in regard to leukemic spleens is admirable. It took them a long time to learn that the removal of such spleens always ended in death. To-day any abdominal lump resembling a spleen suggests a blood count.

Under abnormal conditions almost any organ of the abdomen may reach the pelvis. A distended and dilated stomach occasionally reaches the pelvis, has been exposed and punctured for an ovarian cyst. It is important to know that the kidney is occasionally a pelvic organ, as Sutton states that he has personal knowledge of such kidneys—five in women and one in a man. It is impossible to recognize this anomaly until the kidney is exposed in its anomalous position, but the surgeon's suspicions should be aroused, for it lies behind the peritoneum. The use of an anesthetic is advised in the diagnosis of some abdominal swellings, and it is held that a swelling which disappears under an anesthetic rarely requires the aid of surgery, a case in point being that of a young woman who stated that she had accidentally swallowed a cork.

Finally, caution is given in regard to errors incident to the use of the X-ray, an instance being that of a woman with dermoid cyst, the teeth lying therein strongly suggesting ureteral calculi.

Sutton closes by saying that the Psalmist sings, "Put not your trust in princes." The surgeon learns that it is foolish to put too much trust in shadows.

IMPLANTATION OF THE GENERATIVE GLANDS AND ITS THERAPEUTIC POSSIBILITIES.—G. F. Lydston finds that successful total or partial implantation of human sex glands in both male and female is practicable. Glands taken from the living subjects are most desirable, though rarely obtainable. Glands taken from the healthy dead body at any time prior to the beginning of decomposition are of therapeutic value equal to that of those taken in vivo if implantation succeeds. In human beings the gland of one sex is transplantable upon the other and it is possible that the hormone of the one is useful to the other. The author's experiments apparently show that the tissues of the female are more hospitable to the implanted male sex glands than are the tissues of the male. The benefits of implantation probably accrue irrespective of the site of the implantation, but the vicinity of the peritoneum (extra-abdominal) in the female and of the tunica vaginalis in the male are the sites of election. The development of senility possibly can be retarded and longevity increased by internal sex secretion derived from

implantation. The climacteric may be postponed by it or the disagreeable features of the climacteric relieved. Defective and aberrant psychical or physical sex development and differentiation—inversions and perversions—are definite indications for sex gland implantation. Certain cases of cryptorchidism and imperfect testicular development are an especially promising field for it. Chronic diseases of the skin due to or modified by nutritional disturbances—notably, certain types of chronic eczema, psoriasis, and ichthyosis—in a certain proportion of cases apparently are likely to be benefited and possibly cured by sex gland implantation. That arteriosclerosis will in its early stages be benefited by sex gland implantation is probable. Inferentially if taken early senile dementia possibly may show beneficial results. All conditions incidental to sex gland mutilations in either sex afford a positive indication for sex gland implantation, the probability of benefit being inversely as the length of time that has elapsed since the mutilation and dependent on the age at which it occurred. The most important point of all is that in properly selected cases successful implantation ought inevitably to increase physiological efficiency with all the benefits accruing therefrom. With increased physiological efficiency come individual and social efficiency.—*N. Y. Med. Jour.*

TRAUMATIC TETANUS.—M. H. Gordon points out that Sawamura whose work is quite recent (1909) recognizes three kinds of tetanus: tetanus ascendens, tetanus descendens, and mixed tetanus. In tetanus ascendens the local muscles are affected first; next the tetanus spreads up the limb, then to the opposite limb, and finally up the trunk. This is the form commonest in experimental animals after subcutaneous or intramuscular injection. It is possible, however, that this type is not as rare in man as may be supposed. Tetanus descendens appears to be the commonest form in man and the horse. The muscles of the jaw and neck are first affected and then the disease spreads down the body. It is of graver significance than tetanus ascendens. In mixed tetanus both the above forms occur. The patient's chance of life depends upon (1) the incubation period, (2) the rapidity of onset and severity of spasms, and (3) the duration of the disease. Of these points (1) is the most important and (2) comes next. In the words of Kanthack, "fatality is in direct proportion to rapidity of onset, and inversely proportional to the duration of the disease." As long ago as 1891 Vaillard and Vincent showed that when freed of adhering toxin either by washing or by heat neither *B. tetani* nor its spores produced tetanus in animals by simple inoculation. They found, however, that the toxin-free bacillus or spore could produce the disease if they bruised the tissues locally by pinching them with a forceps, or if they simultaneously injected either lactic acid or another micro-organism such as *B. prodigiosus* or even its filtrate. These experiments are generally held to show the importance of bruising and also of a mixed infection in the genesis of tetanus. There is reason for doubting, however, if it is even now clearly realized how very important the associated bacteria may be. The author attributes an important role to the associated bacteria particularly in fatal cases. It seems probable that the explanation of the difference in prognosis according to the length of the incubation period is directly due to the association of *B. tetani* with other virulent bacteria of which the most important is the anaerobic bacil-

lus of Welch. While tetanus antitoxin has been a brilliant success when applied prophylactically, and its efficiency in this sense is beyond question, there is no doubt that up to the present its employment after the onset of tetanus has proved disappointing. The conclusion which Roux and Borrell came to as the result of their experiments was that "a few drops of tetanus antitoxin in the brain cure tetanus better than large quantities introduced into the blood under the skin. It is not sufficient to give the antitoxin; it must be introduced in the right manner. There is a point in the disease, however, beyond which antitoxin is of no avail in whatever fashion it is employed. The intracranial injection lengthens the period of efficacious treatment." The question as to how to deal with the anaerobic bacillus of Welch when it is also present has not yet been satisfactorily solved. At the present time the best thing to do seems to be to give the wound as much drainage, free air, and permanganate as possible.—*London Lancet*.

CARE OF WOUNDED IN GERMANY. The surgeon-general of the German army, von Schjerning, published recently in a German lay paper (*Nord-deutsche Allg. Zeitung*) the following report on the care of wounded and the health of the troops in the western seat of war. He commented on the difficulties inseparable from the rapid advance of the troops and the fact that at times the violence and long continuance of the artillery fire often rendered it impossible to seek the wounded on the battlefield, because "for days at a time certain points were shelled furiously. Every day many were wounded. The large battles and skirmishes over such a long extent of firing line has made the care of the wounded extremely difficult. Surgeons and bearers had to submit to the military exigencies of the campaign, and there were many hours when it would have been madness to attempt to bring in the wounded. On the whole, however, the arrangements proved satisfactory in every way. All the wounded had their wounds bandaged on the battlefield, and this done so well that often, in fact, nearly always, the first dressing could be left unmolested until they reached the home zone. The severely wounded were brought at once to the field hospital and then to the base hospitals. As the troops were constantly pushing forward, the field hospitals had to be constantly changed and prompt transference to the base hospitals was necessary. But all was done with as little discomfort as possible. The slightly wounded were taken to the base hospitals in carts, autos or on foot; in one week there were about 40,000 to 50,000 of these, and they were all sent back to the home zone. Every train and vehicle bringing ammunition or other supplies to the front was emptied at once and sent back filled with the wounded. Only very rarely any actual hospital trains came through to the front. We had to use freight trains as we could not let the wounded accumulate for fear of bringing on epidemics. We have succeeded in avoiding this. The health of the troops is good. Catarrhal enteritis—isolated mild dysentery cases—is growing less frequent, and there are only scattered cases of typhoid.

"Of course the journey in the freight cars was not always comfortable for the wounded. But it was better to send the slightly wounded back home where they could get good shelter and care than to let them lie around in more or less demolished houses and often without adequate care. I reiterate: The transportation was satisfactory and the wounded were well taken care of at practically every station. I inspected personally 30,000

wounded at Coblenz, Liege, Namur, Sedan, Montmedy and elsewhere along the front and I did not find one who was not properly bandaged. The work on the battlefield and in the base hospitals was the hardest. Physicians and nurses worked day and night with the utmost devotion of all their energies, and I am glad to say that this was fully appreciated by the Kaiser and the military officers. The large number of iron crosses which have been bestowed on the physicians with the army testifies to the appreciation of their devoted labors. Of course some wounded man here or there did not have everything to suit him and especially the family complained at times. War nowadays takes no regard for anyone. But it would be too bad to generalize from a few scattered cases, as sometimes happens.

"There are 9,000 physicians in the field. How many are left at home, and who is adapted for service in the field and willing? Surgeons are needed in the home zone too, and as we have sent the wounded back home to be taken care of, the main task is thus placed in the hands of medical men in the home zone, so that we hope there are plenty of physicians and nurses for this task. Many nurses here at the front can find no work to do. It is utterly impossible to use them on the battlefield under present conditions of warfare and the frightful artillery fire. In one of the base hospitals I met Kraus and Pfeiffer and both confirmed my impression that the organization, the personnel and the supplies in the medical department answered all requirements, and they volunteered in addition that the work of the medical men on the firing-line was beyond all praise. As further testimony to this I mention the words of admiration for the work of the medical department spoken by the chaplain in chief for the army who has been at the front. Everywhere under the sign of the Red Cross kindly hands are ready to help and care for the wounded. We can be quite serene. The only thing that has given us trouble at times hitherto has been the transferring of the wounded from the field to the base hospital. But for this service further means of transportation have already been provided. Our Berlin autobus has proved the most useful; I took seventy-five of these along with me at the opening of the campaign. Several other cities have now sent us their park autobuses. And as now the supply of dressing materials and drugs is regularly replenished, we can be content."

DIFFERENTIAL DIAGNOSIS OF SEPSIS AND PYAEMIA.—Nacke (Berlin) says septicaemia and pyaemia are often confused in diagnosis; and yet the two conditions are so distinctly portrayed that there ought not to be any difficulty. While in the pathological findings a sharp distinction may not be possible, yet in obstetric practice the two rarely exist as mutual complications. The diagnosis is of importance in several respects. While puerperal sepsis usually has a fatal termination, the prognosis in pyemia is not so unfavorable. In pyaemia if the patient's constitution is otherwise good and has not been weakened by former diseases, the prospect exists of prolonging life by means of nutrition, wine and other invigorating remedies until the system may overcome the infection. The cases predisposed to this form of general infection are those where the placenta was adherent or partly retained, placenta praevia, uterine atony and where uterine tamponade was required. After other operative intraventions, such as forceps, version, and cutting operations sepsis was more often seen. In py-

aemia the chills occurred mostly on the fifth to the seventh day while the condition of the patient, both subjectively and objectively, had until then been fairly good. In sepsis, however, the fever generally begins on the second or third day and the general condition in the very first days causes suspicion of infection while the patient feels prostrated and sick. The diagnosis of pyaemia is made certain by the repeated chills, more than three, as they rarely occur in pyelitis and other diseases. At one or two day intervals the chills recur, and in the meanwhile the patient may feel quite well, have appetite, and look fairly well. In sepsis the patient is apathetic, unconcerned, indifferent to the attentions of nursing, has no appetite, feels herself to be quite ill and may die even in the first week from peritonitis. Fulminating cases, who have jaundice on the second day, enlarged spleen and albuminous urine, may terminate fatally on the third day even without peritonitis. All septic cases have a small, rapid pulse (120 to 140) from the beginning, which does not temporarily improve as in pyaemia. If in a febrile puerperal case no localization can be demonstrated, and other extra genital diseases can be excluded, if the temperature and pulse are high for several days, the suspicion of general infection is justified. The following table has often aided the diagnosis, together with the above.

Sepsis: 1. Very rapid pulse. 2. Beginning or developed peritonitis. 3. Permanent appearance of serious illness.

Pyaemia: 1. More than three chills, other disease being excluded. 2. Absence of peritonitis. 3. Periodical appearance of illness (during the chill).

Cases of pyaemia continuing over four weeks and having had no serious loss of strength, usually get well. But nothing may be stated definitely concerning the prognosis. The more frequent the chills, loss of strength and weakness of the heart, the more likely is the unfavorable termination.—*Zeitschr. f. Geb. u. Gyn.* Vol. 74—583.

THEODORE J. GRAMM, M. D.

VACCINE TREATMENT OF GONORRHOEA.—Klaue's (Frankfurt) article is based upon his experience in males. He says the vaccine should not be over three months old. The injections are repeated at intervals of 4 or 5 days. Slight fever is no contraindication. The treatment has no prophylactic value. It is of no use in diagnosis. The best therapeutic action is seen in epididymitis and in arthritis. The action is less pronounced, but still valuable in adnexal and cervical disease in women. Recent cases, where connective tissue changes have not yet occurred offer better success than older cases. No ill results need be feared. The author believes gonococcus vaccine is indicated in all cases.—*Abstr. Zentralbl. f. Gyn.* 1914—108.

THEODORE J. GRAMM, M. D.

THE LEUTIN REACTION. (*Cutireaction of Syphilis*).—Leutin is prepared according to Noguchi's method from a pure culture of *treponema pallidum*. In adults 0.07 cm. is injected under the skin, 0.05 cm. in children. When the reaction is negative a mild erythema appears after 24 hours, which again disappears after 48 hours. When positive the reaction appears in two forms; a papular form, with red, hard papule appearing from 24 to 48 hours, becoming larger in the first two or three days and disappears from the seventh to the tenth day; a pustular form: the papule becomes a

pustule which discharges after a few days. Pigmentation remains; a torpid form consisting in the appearance of a pustule after two or three weeks. Luetin reaction furnishes a means of discovering lues in its chronic or latent stage in which clinical manifestations are not present and the Wassermann reaction fails. A negative reaction in cases with pronounced clinical evidence and positive Wassermann have an unfavorable prognosis and are likely to have progressive paralysis.—*Abstr. Zentralbl. f. Gyn.* 1914—107.

THEODORE J. GRAMM, M. D.

THE THEORY OF PREMATURE SEPARATION OF THE PLACENTA.—Aschner (Halle) points out that in the etiology of premature separation of the placenta, besides trauma and endometritis, nephritis comes prominently into account. In such a case where the placenta occupied a normal site, the urine contained 1.5 per cent. albumin; and on the following delivery no albumin. The urinary albumin reacted like placental albumin in the Abderhalden test. Therefore chronic nephritis was not present, but only the conditions associated with the kidney of pregnancy. The same conditions were shown to exist in a series of uncomplicated cases of kidney of pregnancy.

The author also calls attention to a characteristic finding in a number of specimens of prematurely separated placentas, which consisted in every placenta in the existence of circumscribed hole at the site of the retroplacental hematoma. The cabyledors at this point were compressed, though the several layers of the placenta were intact in spite of this flattening. The harmfulness of the placental albumin may have the same effect in such cases of albuminuria as also of the mechanical effect of premature separation of the placenta. Veit regards the latter effect as a purely mechanical action of the placenta albumina, namely, obstruction by placental villi of the afferent uterine vessels.—*Zentralbl. f. Gyn.* 1913—1503.

THEODORE J. GRAMM, M. D.

THE HISTOLOGY OF CARCINOMA OF THE CERVIX.—Liegner (Breslau) has found from an examination of 30 cases that the microscopic picture in cervical carcinoma varies greatly and everyone shows a certain individuality. The differences are shown in the structure, the size of the cells, the abundance of protoplasm, the size of the nuclei, and in the biological peculiarities; also in the arrangement of the cancer cells, whether irregular or not. Great differences occur in the infiltration of the cancer nests and in the tissues between. The infiltration usually consists of round cells and eosinophile leucocytes. At the border of the tumor there is mostly a wall composed of these cells, which form a good barrier but which may also be perforated by the cancer. Toward the corpus uteri the cancer may change its character. The parametria are mostly affected by extension of growth. The sense of touch gives no certain information of their involvement. Lymph nodules may be formed in the parametria which may be regarded as primary lymphatic stasis. The lymph glands on the large vessels are often affected, even when the parametrium remains unaffected. The character of the lymph gland metastases is mostly the same as that of the primary focus. The vagina in many cases becomes infected beneath the epithelial layer, and here the infiltration may be extensive. From this varied

picture of possibilities which may exist in a case of cancer, a composite picture may be drawn which possesses a certain individuality never recurring elsewhere. It is not at present possible to draw any inference concerning malignancy from the histological picture.—*Zentralbl. f. Gyn.* 1913—1693.

THEODORE J. GRAMM, M. D.

THE CAUSE OF DEATH FROM BURNS.—Heyde and Vogt have made some very important experiments to determine the cause of death from burns. A large series of exact observations led to the conclusion that burned tissue acts like foreign tissues. It places the system in a condition of hypersensitiveness in that it reacts with protracted shock from the further addition of altered albumin. Animals into whom burned tissue is transplanted acted as though they themselves had been burned. From repeated burnings or from transplantation definite symptoms of anaphylaxis appeared. Further experiments showed that for the development of the toxic condition, the influence of the surrounding living tissue upon the destroyed tissue is of much importance. Examination of the urine of burned animals showed the presence of a substance occasionally found in normal urine, which causes death of the animals with symptoms of anaphylactic shock. This the authors believe to have recognized as belonging to guanidin bodies. As remedies the authors recommend atropin and calcium chloride. In addition in the third grade of burns the operative removal of the burned tissue should be considered.—*Abstr. Zentralbl. f. Gyn.* 1913—1728.

THEODORE J. GRAMM, M. D.

THE CLINICAL SIGNIFICANCE OF RETINITIS ALBUMENURICA IN OBSTETRICS.—Miller (Vienna) emphasizes the importance of ophthalmoscopic examination in obstetrics. Retinitis albumenurica frequently occurs in nephritis, while it is rarely seen in eclampsia in spite of the existence of amaurosis. This is important in differential diagnosis. The prognosis of retinitis albumenurica in pregnancy is not worse than in other conditions, but recurrence is quite common in subsequent pregnancies. Retinitis commonly accompanies nephritis, and when present is a sign that the albumenuria will long continue. Retinitis albumenurica gives an indication whether nephritis is present or whether the case is one of albumenuria in eclampsia.—*Zentralbl. f. Gyn.* 1913—1509.

THEODORE J. GRAMM, M. D.

THE AGE MOST FAVORABLE FOR THE FIRST LABOR.—Richter and Hiess (Vienna) have carefully studied this subject and have found that the physiological time for the first labor is between the age of 17 and 26 years, and the best time between 18 and 23 years, during which time all complications for both mother and child are least. After 26 years gradually the conditions attending the old primipara set in, conditions which may be dated from the 29th year on account of the more frequent occurrence of all complications. The authors are not inclined to regard as unfavorable those cases in which labor occurs during the period of development, namely, from 14 to 17 years, although it cannot be denied that complications during these years are more frequent than during the physiological time of the first labor.—*Monatschrift f. G. u. G.* Vol. 38—625.

THEODORE J. GRAMM, M. D.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

FINDING THE CURATIVE REMEDY—AN ANALYTICAL PROCEDURE.—Give a chemist a solution of unknown metallic salts, and he will treat a portion of it with certain reagents in order to precipitate one group of metals. Other portions, treated by other reagents, will precipitate other groups. These precipitates are treated for the purpose of separating the different metals from one another until the unknown solution is resolved into all its component parts. And this can actually be done—*because he understands the law of chemical attraction whereby elements form chemical unions, and because he knows how all the elements react one to another.* Chemistry, therefore, is considered an exact science.

In medical science nothing could be more desirable than a method whereby the best methods of therapeutics could be selected with an equal exactness, and what makes such a state of affairs really possible is a definite law of relationship between humans on the one hand and materials with a therapeutic value on the other. This Dr. Stearns considers, and rightly so, to be the crux of the situation. Biology demonstrates a physiological law which fulfils all the conditions for exact therapeutic selection. Broadly viewed everything which lives has a certain adaptability. The cactus can be kept for months in a dry closet and yet retain vitality enough to root when placed in favorable surroundings. There is a fish which dries up in the mud during the dry season and regains its activity with the return of water. Man, himself, has a wide range of adaptability. He may travel from the torrid zone to the polar region and yet his blood will register the same degree of temperature. He can accustom himself to poison so that what at first would have been a fatal amount causes him but little harm. He can be infected by pathogenic bacteria and subsequently develop immunity from the same.

All this goes to show that life has power, but it is a power with certain limitations. Within these limitations come an adapting resistance which always strives to maintain physical as well as functional integrity. In place of the law of chemical attraction is the cognate rule of vital reaction. In place of elements we have the influences affecting life itself. It is only necessary, therefore, to study man in relation to this law to develop an exact method of therapeutics—*a method effectively bringing into life a vital materia medica pura which keeps alit the sacred fires of healing science in an age of purely materialistic nihilism.*

The signs of disease, such as fever, pain, or collapse are not merely

evil things to be gotten rid of, but are the results of nature's reaction. In fact they are her reactive gropings in search of cure and should be so realized by a treatment which does not hinder the reaction of which they are the result.

It is usual to consider the effect of an infection as disease, and as something altogether different in principle from the effect of a drug. This, however, is a sorry mistake, for the reaction of the organism against each has an identical bearing. It is the recoil of the elastic force we call life back to its normal tension, and is an effort along the pathway of cure. In this connection, it is of course quite necessary to select, in accordance with the law of reaction, therapeutic measures for a case of illness, which may favor a happy issue of the case. Conditions of heat, cold, moisture, etc., should at all times favor that particular reaction which nature is establishing. In the choice of the remedy all that is necessary is a knowledge of two simple factors, one of which is the kind of reaction being established in the patient's organism and the other is that peculiar kind of reaction caused by every medicinal substance.

In the case of the latter it is well to remember that many drugs may cause, let us say diarrhea, but the presence of that very diarrheic condition alone is not sufficient to determine what drug may most closely bear nearest resemblance to it. We really should know something about the peculiar character of that state of bowel looseness.

With arsenic the diarrhea is worse after eating or drinking, and is accompanied by weakness, restlessness, and thirst for small amounts of drink and at frequent intervals. With white bryony the reaction that causes the diarrhea is worse in the morning, and in hot weather, and from any motion whatsoever. With sulphur the motions are offensive and there is apt to be colic before the evacuations. Thus is seen why the sum total of specific characters and modalities are so unerringly effective. In this ability to choose most accurately Hahnemann himself was most adept and it was because he tried over one hundred drugs on himself, a series of painful trials which often entailed the most extreme suffering. No one will gainsay that experience is the process of becoming expert through experiment and the practitioner who frequently makes provings is invariably the more skillful physician as far as therapeutics alone go.

To make the analytical method practical it will be well to follow a definite practice. The following is very good and is the plan approved by Dr. Stearns himself. To begin with the patient's own narrative exactly as given, noting more especially any circumstances which aggravate or ameliorate the symptoms, such as motion, time of day, etc. Get in chronological order all the facts of the present as well as the past indisposition or deviation from the normal state and inquire minutely into heredity, locations affected, character, coloration, odor, etc., of the various bodily secretions and finally the reaction of the bodily structure as a whole to seasonal change, effects from climaxis, ability or inability to perspire, to fall asleep, or possibly to think rapidly and acutely. Last, but not least are those changes in the mind itself, especially if the same verge toward the rare or singular in character. Add to this anything which the physical examination, the microscope, the sphygmomanometer and other diagnostic aids may reveal and you are adequately prepared to deal with the case in a truly scientific manner.—*Guy Beckley Stearns.*

THE HAHNEMANNIAN MONTHLY.

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BUREAU OF SURGERY

OBSTRUCTIVE JAUNDICE.

BY

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WHEN the liver was given the function of manufacturing bile, it was evidently intended that there should be always maintained an undisputed right of way from that factory to the nearest point of discharge. Let there be any kind of a disturbance along this highway of bile ducts sufficient to impede, in the least, the bile traffic, and immediately the conjunctivæ run up a yellow flag of warning.

When we consider that the bile is secreted by the liver cells under such low pressure, that its outflow is more like a seepage than a discharge, we can better understand how a slight obstruction anywhere along the ducts will interfere with the liver drainage.

We are always deeply concerned when we observe any inactivity of the kidneys with an appreciable lessening of the amount of urine; but when we recall the fact that the liver manufactures in the twenty-four hours an amount of bile near-

ly equal to the amount of urine excreted by the kidneys during that period, and that any appreciable obstruction to the outflow of the bile means just so much bile sidetracked in the general circulation, we will have a better understanding of the consequences of obstructive jaundice. It is an interesting question to know just how much, and how long, bile may be taken up into the general circulation without fatal results. While the toxemia is not as rapid as that of uremia, yet it is as surely fatal if not relieved.

There seems to be a wide margin of difference in the susceptibility of people to the effects of cholemia. I have seen patients, where there was every evidence of complete biliary obstruction, live for six months and remain comparatively comfortable. I have again seen those where the brain seemed to be effected within a few days of the oncoming jaundice, and violent insanity or coma ensue. As every tissue in the body, save that of the nerve fibres, sooner or later partakes of the biliary infection, it simply becomes a question of which structures will be the first to succumb to its toxic influence. The pigmentation generally shows first in the conjunctivae, and soon thereafter in the urine, which is rendered markedly dark in color. The stools become white, owing to the presence of undigested fat. The pulse is quite likely to be affected, sometimes showing a lowering to 30 to 40 per minute. The presence of bile in the blood affects its fluidity and coagulability; hence, there is always a marked tendency to hemorrhages in cholemic patients. The kidneys are particularly liable to become hemorrhagic, and thus hematuria is not an infrequent symptom of jaundice. The ever-present itching of the skin is due to the presence of bile in the superficial vessels, and the consequent irritation of nerve terminals. Hemorrhage from the gums, stomach, or intestines, is not uncommon when the bile has been present in the circulation for some days.

I recall a patient suffering from malignant disease of the liver, with a consequent deep jaundice, who was greatly troubled with an elongated uvula, which he finally induced a specialist to amputate. It kept the specialist and myself busy for two days in our endeavors to check the watery hemorrhage which constantly oozed from the tip of the incised organ.

It is a well known fact that the new born babe is frequently troubled with a form of obstructive jaundice. This is probably functional in character, and in most instances clears up in a

few days; but while it lasts it is unwise to attempt any operation upon the babe, as the hemorrhage is likely to be very obstinate.

I well recall a circumcision which I once made upon a new born jaundiced babe, and the resultant watery leakage from the edges of the mucus membrane and the stitch holes, which persisted in spite of all efforts, for twenty-four hours. The administration to the adult of calcium chloride in doses of 20 gr. every 4-6 hours, is a very excellent preventive of hemorrhages, and should be given to such patients a few days before subjecting them to any operation.

Obstructive jaundice may be caused by a simple catarrhal condition of the biliary ducts. As before stated, the flow of bile from the liver is more in the form of a seepage than a forced expulsion; hence, the partial occlusion of the ducts by mucus would be sufficient to obstruct the outflow. This catarrhal condition is usually the result of some duodenal infection or irritation traveling from the bowel upward into the common duct. It may also come from a slight hepatic, or gall bladder congestion, whereby mucus has found its way downward in the hepatic or common ducts.

Thompson reports a case where catarrhal jaundice resulted from the taking of an overdose of colchicum. This is an interesting fact to the homœopathic physician, especially as it demonstrates the action of drugs upon specific structures with resultant symptoms. Jaundice is only a symptom of a disease; yet that symptom may be treated successfully by the administration of such a drug as colchicum. Chelidonium and china each have their simillimum in jaundice. It is a question whether the administration of calomel in jaundice is a justifiable procedure. While the calomel will stimulate the liver to greater activity, and perhaps aid it to force a passage through the partially obstructed ducts, yet its failure to effect such a passage would only augment the difficulty by obliging the circulatory system to take up more bile into the general circulation.

Another cause of obstructive jaundice is the lodgement in any one of the ducts, of gall stones. Occasionally, though rarely, biliary concretions may form in the liver, and thus obstruct the outflow of bile before it reaches even the hepatic duct. More generally, however, the concretions are formed in the gall bladder, and by the contractive effort of that organ they are driven into the cystic or common duct.

Briefly speaking, the formation of gall stones is due mainly to an inflammation of the lining of the gall bladder. This may be either catarrhal or infective. Obstruction of the cystic duct will not produce jaundice, unless the stone be so lodged that it impinges upon the common duct. Common duct obstruction may occur anywhere along the course of the duct, but the most likely location is at the outlet of the duct in the duodenum, the ampulla of Vater. At this outlet there is a lessening in the calibre of the duct due to the presence of a small sphincter muscle which holds the concretion firmly; thus blocking the outflow more or less completely. In many instances of jaundice due to concretions in the common duct we find the jaundice intermittent, varying at times from a very deep yellow, with marked staining of the urine, to a comparative clearing out of the pigment, and the freedom of bile in the urine. The stools also show marked changes in color. This is due, in the main, to the contraction and relaxation of the sphincter of Vater, thereby allowing the concretion to float up or down at the ampulla. This has been referred to by some writers as the ball valve obstruction. It becomes readily apparent, that when the concretion is forced down into the ampulla, no bile can pass into the duodenum, but when the fibres of the sphincter are relaxed the concretion floats free from the opening, thereby allowing a small quantity of bile to flow past it.

There has been much discussion relative to the gall bladder being a carrier, or a harbinger of the typhoid bacillus. There is now a comparatively unanimous conclusion, on the part of investigators, that the typhoid bacillus is regularly present in the gall bladder, contained in a pure culture, in practically all cases of typhoid fever.

A second interesting conclusion reached by Mason is the following: That the typhoid bacillus may persist in the gall bladder as well as within gall stones for weeks, months, and even years after the patient has recovered. To illustrate this fact I can mention a very typical case.

A year ago I operated upon a woman sixty-four years of age, who had obstructive jaundice. It proved to be a stone in the common duct. In removing it I crushed the stone and was obliged to take it out piecemeal. She rallied nicely from the operation and did well for a week. Then she began to show an evening temperature. This climbed steadily higher, notwithstanding the wound was healing perfectly and remaining

in an aseptic condition. The bile was flowing freely from the tube in the gall bladder, and there was not the slightest local sign of infection. She ran a typical course of typhoid fever for six weeks, ultimately making a good recovery. We learned later that she had had a severe attack of typhoid fever fifteen years prior, with evidence of gall bladder complication.

It seems quite probable that in her case the typhoid bacillus was lodged in the gall bladder, or the gall stone, and that breaking up the gall stone, or draining the gall bladder stirred the bacillus to activity, with the resultant fever.

There are a few instances where obstructive jaundice occurs without a demonstrable obstruction in the ducts. This can only be explained by attributing the trouble to the liver, wherein the minute radicals of the bile channels have become obstructed with a general stasis of bile in the liver, such as we get in cirrhosis of the liver.

There are, moreover, many factors which are productive of jaundice but which cannot in any sense be classed as obstructive factors, such as poisons, snake venom, yellow fever, malaria, acute yellow atrophy, even nerve perturbation, called emotional jaundice; but in this paper we are considering only that form of jaundice which is produced by a definite, tangible obstruction of the outflow of bile. The whole object of this paper is an endeavor to distinguish between a jaundice which can be relieved only by surgical means and one that is amenable to medical treatment.

Summarizing briefly I should say the following symptoms generally indicate mechanical obstruction which could be best met by surgical measures:

Jaundice coming on rapidly and reaching a deep yellow early in the attack.

Intermittent jaundice, especially accompanied by severe colicky pains such as would be produced by the passage of gall stones.

Jaundice immediately following a severe colic attack.

The symptoms indicative of disease of the liver, pancreas, or gall bladder, are, and they are to be regarded as non-surgical: jaundice with ascites, with markedly enlarged liver, such as cirrhosis; jaundice coming on very gradually with ultimate clay-colored stools and without pain; jaundice with pyrexia and accompanied with no pain. As a rule jaundice resulting from a calculus in the common duct will show a previous his-

tory, remote or present, of biliary colic. This may have been so remote that the patient has nearly forgotten it, but usually such a history can be elicited.

We come now to consider a form of jaundice wherein the causative factor may at the outset be quite obscure. A patient well along in the late 60's or 70's has been feeling well as usual, with no gastric or intestinal disturbances. Suddenly he appears to be jaundiced, his comfortable feeling has not been impaired, and he is at a loss to understand his yellow skin. He is absolutely free from pain, and while his appetite is slightly affected, yet he feels well. Soon he notices his stools are markedly clay-colored. He seeks the advice of his physician, who goes over him carefully, eliciting only one symptom, aside from his jaundice, and that is an enlargement in the region of the gall bladder. This may or may not be sensitive; but the enlargement is marked, especially if the patient has a thin abdominal wall. The treatment, whatever it may be, is of little avail; the jaundice persists and becomes deeper, the appetite flags, with accompanying weakness and weight reduction. Months may pass before the real cause becomes apparent, unless it was anticipated at the first examination. In the end comes the diagnosis of "cancer of the gall bladder, biliary ducts, liver, or pancreas."

I have within the last year observed three such cases, all of which have made a very deep impression upon my mind, particularly as in none of the three were the patients materially affected in the early stages of the disease; yet in all three there was a rapid ensuing jaundice, with subsequent clay-colored stools. Two of these patients I subjected to operation with fairly good results. As one of them presents some features of unusual interest, I will take the liberty of detailing it.

The patient was a woman 76 years of age, with a very clean family history. She was spare in build but of that wiry, enduring type which shows great lasting qualities. For the previous three or four years she had been subject to what she called "bilious attacks," wherein she would have active diarrhœa and some vomiting.

I saw her first April 19, 1914. She was then deeply jaundiced, but felt perfectly well otherwise. I went over her carefully and found a distinct lump under the edge of the liver, which was movable and non-painful. She said she had been jaundiced for a week, and that it appeared suddenly, but had

had no pain whatsoever in the abdomen. Her stools were clay-colored, the urine highly tinged with bile.

The rapid appearance of jaundice, the absence of vomiting and pain, together with the absence of temperature and tenderness, ruled out anything of an inflammatory or infective type. The absence of biliary colic, either immediate or remote, was evidence against common duct obstruction by a calculus. The presence of a lump in the region of the gall bladder, movable and non-painful, was naturally indicative of an over-distended gall bladder.

But the question was, "What had interfered with the outflow of bile from the gall bladder, and what was interfering with the passage of the bile through the common duct?" It was to be assumed that she had some form of common duct obstruction, and as the jaundice grew deeper day by day, it became apparent that operative measures must be employed to relieve the obstruction.

I operated upon her April 25th and found a cancer of the gall bladder, which extended downward, implicating the mesenteric glands and the entire length of the common duct. The gall bladder was greatly distended as its outflow had been entirely obstructed, and its walls thickened by the cancerous infiltration. The question immediately arose, "What could be done to relieve the steadily increasing jaundice?"

It was found that the common duct was so badly involved in the cancerous growth that its lumen had been entirely obliterated. There was, therefore, no natural passage whatsoever for the bile to reach the duodenum. I, therefore, removed the gall bladder, resecting the hepatic duct at a point about one inch from its exit from the liver. I also removed the mesenteric glands, together with a portion of the common duct. In so doing I had, of course, cut off all possible connection between the liver and the duodenum. I then attached a rubber drainage tube to the one inch stump of the hepatic duct, brought the tube to the surface of the wound, fastened it to the skin, and closed the incision.

There was at once a free drainage through the rubber tube, showing the connection between said tube and the hepatic duct was perfect. The patient improved at once, the jaundice disappeared, the appetite and strength grew better. The stools of course showed no change as all of the bile manufactured by the liver was now coming out through the rubber tube.

This operation, of course, was only a relief measure to enable the patient to recover from her deepening jaundice. At the end of two weeks the rubber tube was removed, when it was found that nature had built up a sinus about this tube, and the bile thereafter flowed freely through this newly-made sinus. At the end of a few weeks it became apparent that something must be done to enable the patient to get some bile into the intestinal tract.

June 18 she was again placed upon the operating table, and an opening made through the prior incision. The newly-made sinus, from the liver to the surface of the skin, was carefully dissected from the skin attachment, and an effort made to connect this sinus with some part of the intestinal tract. I was gratified to find no evidence of a return of a cancerous growth.

It became apparent that the duodenum could not be brought to the under surface of the liver and there connected with the sinus, without making such an acute angle in the duodenum as would result in an obstruction. I then sought the pyloric end of the stomach and found it could easily be brought to the under surface of the liver without any undue stretching. Freeing about one inch of the sinus, which was practically an elongated hepatic duct, I made a small opening in the pyloric end of the stomach, inserted this sinus, or duct, well into the opening, and there stitched it by a running purse string suture. I then stitched the pylorus to the under surface of the liver so as to insure its permanency to that organ. I placed a drainage tube on either side of the anastomosis of the stomach and duct, and closed the incision. I was gratified to find in a few hours that the patient vomited a small quantity of bile, which showed that the opening from the liver into the stomach was patent. In a day or two there was evidence of bile tinge in the stools. She continued to improve for the next two months, having daily bowel evacuations that were perfectly normal in color, not the slightest evidence of jaundice, little or no irritation of the stomach from the presence of bile, and no vomiting. Her appetite improved, and her strength increased materially.

At the end of two months she began gradually showing evidence of jaundice. This remained stationary, while she lost strength steadily; but at no time was there an absence of bile tinge to the stool. She died August 26th from recurrent cancer of the liver.

This case is illustrative of a number of interesting points,

first, the insidious manner in which cancer attacks the gall bladder and bile ducts, and the foremost symptom exhibited, namely, rapid and deep jaundice; second, the possibility of removing the diseased common duct; third, the possibility and feasibility of making a direct connection between the liver and the stomach, thus eliminating the gall bladder and all the biliary ducts. This operation is known as hepatico-gastrostomy, and Deaver, in his recent work on "Diseases of the Biliary Tract," records but seven such operations, in none of which was life prolonged to the extent of that in my patient, which was a period of two and one half months.

In view of the dire consequences of prolonged and deep jaundice, it is necessary that we should view every such case with deep concern, and spare no pains in ferreting out the productive factor in the obstruction.

WHAT THE PUBLIC SHOULD KNOW ABOUT CANCER.

BY

H. L. NORTHPROP, M. D., PHILADELPHIA.

THERE always have been professional secrets, there always will be professional secrets, and there always ought to be professional secrets in the medical profession. But the days of professional duping,—I may say of professional legerdemain, are gone. Professional exclusivism has given place to a more intimate,—indeed, a most intimate relationship in matters of great mutual interest and concern between patient and doctor.

It has been in the past a serious mistake upon the part of the medical profession not to have taken the public into its confidence regarding the causes, symptoms, and prevention of certain diseases, especially those of a chronic character and with a high mortality. I refer particularly to tuberculosis and cancer, the two plagues working such havoc among the members of the human race to-day. Now-a-days, the laity are instructed in regard to tuberculosis, its causes, prevention and treatment, by popular lectures on the subject, by newspaper and magazine articles and by other methods, so that it is possible for the laity to co-operate with the profession and for one to be of mutual assistance to the other in curtailing the ravages of this dreadful scourge. Untold good and much progress have been accom-

plished in this way. That an ounce of prevention is worth a pound of cure is a well known axiom which the physician should keep more constantly before him.

Wilson and Willis state that "Cancer is increasing materially in relation to the total number of deaths from all causes: it is increasing materially in relation to the total number of the living." In the United States there are upward of 40,000 deaths from cancer annually; in Great Britain, one man in eleven and one woman in eight dies of the disease. Upon good authority it is made known to us that 90 per cent. of cancers of the cervix are inoperable when first seen by the surgeon; that 90 per cent. of gastric carcinomata are inoperable; 29 per cent. of those in the breast, and a larger percentage of those of the mouth and tongue are actually unfit for radical operation. I am referring not to cases unfavorable for a good result, but to those too far advanced for any reasonable effort at complete removal. "Too late" is a sad comment upon the intelligence of the average patient or the so-called judgment and skill of the average physician. In the language of Tennyson, "someone had blundered," and that someone is either the patient or the doctor, or it may be both. The blunder has been in failing to make an early diagnosis, to recognize the ear-marks of malignant disease and to urge the immediate removal of the lesion while the cancer is a purely local affair, as all cancers are in the beginning and before they become disseminated. In the first instance the disease is strictly local and therefore curable by complete removal; in the second instance, it has become, through metastases, a constitutional and an incurable disease.

It is the duty of the medical college to instruct its students how to recognize and to treat cancer; it is the duty of the profession to instruct the laity in regard to the early recognition of cancer and urge them to seek professional advice upon the first manifestation of anything of an abnormal and suspicious character.

Now comes the question which constitutes the title of this paper: What should the public know about cancer? Answered in a broad and general way, I would say the public should know *all* about cancer,—the more the better. In the first place, acquaint the laity with the magnitude and significance of the figures just set forth. They tell a whole lot; they mean a great deal. They should be placed before the laity at their full face value. Impress the layman with the fact that this is a person-

al matter and that the cancer scourge can be brought under subjection and its ravages curbed only by personal effort on the part of both profession and laity. If the laity do not realize the widespread character of the disease, if they are not filled with a wholesome fear of the seriousness of it, if they do not understand, that unless intelligent, radical treatment is instituted very early that there is no known means of cure under the sun, if they are so ignorant of the manifestations of cancer in its early stages that they cannot lend a helping hand in preventing what virtually amounts to a holocaust when 40,000 lives are lost annually, and no relief yet in sight,—I say if the laity do not know these things, then they can be of no assistance to the medical profession in this warfare against malignancy. The only conclusion is that the high mortality rate must continue and, as it is doing, increase materially. I believe that the profession are doing all that they can in the way of treatment to eradicate cancer, that they are fighting the disease more strenuously than ever before in the history of medicine. The most radical operations performed in surgery to-day are those aimed at the complete removal of the cancer-infected area; X-ray treatment, applied vigorously and persistently, is being tried out with, I regret to say, indifferent success; radium is sub judice; fulguration has its lukewarm advocates; pastes and serums have fallen by the wayside,— and what shall we do next? Question. If early removal when the disease is strictly local results in, and it does in the majority of cases, a cure, then, why don't we seek a solution of this question by giving the public such information and instruction as will urge them, if not compel them, in the interest of self-preservation (the first instinct of living beings) to seek professional advice and insist upon immediate radical removal of the disease by surgical operation, as the quickest, cleanest and most complete method known to the medical world to-day.

To bring this important matter to a practical issue, I would say that the laity should receive instruction on the early manifestations of cancer in a systematic manner, perhaps by means of tracts or leaflets published by Congress and placed in the hands of the physicians of the entire country for distribution among their patients. If an intelligent use is made of such a publication, I am sure that the laity will be impressed with the idea that the medical profession are making a determined effort to stop the devastation wrought by cancer, and will support

them by complying with the request set forth in the circular, viz., to submit to a physical examination upon the first appearance of any suspicious symptom of malignancy.

I would have this circular explain, in plain language, so as to be understood by all, that any lump or tumor, in any part of the body, which is increasing in size either rapidly or slowly, should be reported to the family physician; that any sore, ulcer or raw surface on any part of the body which refuses to heal, or which scabs over temporarily, must be looked upon with suspicion and should be promptly examined by a qualified physician.

The laity should know that if a sore or ulcer persists on those parts of the body where skin joins mucous membrane, such as the eyelids, the lips, the anus, the vaginal margin, or the prepuce, that that sore is almost sure to be a cancer, and its identity must be proved by the proper authority.

The public should know that a sore on the tongue that is obstinate and does not disappear in a short time, which perhaps has been caused by a sharp, ragged tooth, or by excessive smoking of the pipe or cigar is very apt to be of a malignant nature. At the same time the layman should know that a cancer of the tongue may grow and spread like wild-fire, because of the extensive system of lymphatics draining the tongue into neighboring glands. Hence, there is great danger in delay.

The public should know that cancer may occur at any age after (we will say) 20, but that it is preëminently a disease of middle life. It might be stated here that the average age of women with mammary cancer is 48 years, and with uterine cancer, 44; with cancer of the tongue and mouth 50, of the lip 51, of the rectum 50, of the stomach 40. The maximum period of frequency in the female is 45, and in the male 55 years.

Cancer of the stomach is difficult of diagnosis, even in the hands of the specialist, and for this reason alone whatever may be suggestive of its presence should be carefully heeded. Let the layman of middle life understand that if he is suffering from frequent, perhaps slight attacks of indigestion, occasional vomiting without known cause, and loss of weight, he should place himself in the hands of his medical adviser for a comprehensive examination of his stomach and an inquiry into the cause of these symptoms suggestive of gastric carcinoma.

Only a few words need be said to the laywoman about the early indications of cancer of the breast, but whatever is said

must be stated emphatically and forcibly. The woman with a lump in her breast should request her physician to have that lump removed without delay. If, for any good or necessary reason, that request is not granted at the time, the patient should present herself to her physician at frequent intervals for repeated examinations. Let the laity know that many, indeed the majority of innocent lumps in the breast, become cancers if allowed to remain. Give them to understand that it is far better to have a lump removed and find it to be innocent than to look upon it erroneously as innocent and permit it to remain and fasten its cancer grip upon the health and life of its victim.

Another point to be indelibly impressed upon the mind of the laity is that the pain of cancer is often insignificant, or entirely absent until the disease has progressed so far as to attach itself to adjacent structures and to include sensory nerve fibres. The idea that cancer means pain, that a growth or ulceration cannot be a cancer unless pain is present, prevails widely in the minds of most men and women, while those of us who know better, think that Nature is *not* kind to the cancer victim in keeping him or her free from suffering. Far better, in one sense, would it be if pain were an early and a prominent symptom of the disease, for then the patient would be prompted to seek advice and relief before an advanced stage has been reached and a cure is impossible. Therefore, the laity should be dissuaded from regarding pain as a necessary accompaniment of cancer.

Rodman says: "It is a well known fact that women who will not delay in seeking advice as soon as they suspect the presence of an abdominal tumor, and who willingly submit to a local and even a vaginal examination, will carry a tumor of the breast until it has advanced far beyond the stage of operability. Why this is so surpasses the bounds of human understanding. In some cases it may be due, for a considerable length of time, at least, to the absence of pain and soreness which is characteristic of the earlier stages of the disease, and, as a result of which, it may be considered of a trivial nature. This disposition to conceal mammary tumors is so common in all circles of life that I have come to look upon it as a symptom of the disease." The women of to-day should know the truth of this habit of concealment and procrastination among

the members of their sex, and should be thoroughly impressed with the suicidal nature of such idiotic behavior.

It may be well for women to know that 80 per cent. of all tumors of the breast are cancers.

The question of heredity is one which is apt to mislead the laity, inasmuch as many think that heredity plays a prominent part as a causative factor. How frequently the woman with a lump in her breast says, "Doctor, I don't believe this can be a cancer; there is no cancer in our family." The public should be told that probably cancer is not strictly hereditary, according to the teaching of most medical authorities, although it is true that the disease is sometimes to be found attacking two or more members of the same family, but at different periods of time. The histories of a large number of cases of cancer show a few where there seems to be a positive, hereditary, causative influence, but the majority of cases are isolated, or present the disease in near, and not in immediate relatives.

Coley says, "However much authorities may differ as to the amount of influence attributable to heredity, it is impossible to deny that there is some influence. Many cases can be cited to show that in certain families this influence is very striking."

Williams observed a patient, age 53, suffering from uterine cancer, and whose maternal grandmother, mother, mother's two sisters, and patient's two sisters all died of cancer of the uterus. The Bonaparte family is another marked example of the apparent influence of heredity. Napoleon's father, his brother Lucien, and his two sisters, all died of cancer of the stomach. The tendency of cancer to attack the same organ in members of the same family is another remarkable peculiarity of this mysterious hereditary influence. A case was cited by Williams in which the mother and five daughters all died of cancer of the left breast. Rodman does not believe in heredity in malignant disease. I must say that I do. I believe, at least, that there is more to heredity than we know at the present time.

Finally, laywomen should be told to suspect cancer of the uterus when there is present a thin, clear, brownish, watery discharge, at first intermittent, later followed by persistent leucorrhoea, which is blood-tinged and offensive. Hemorrhage occurs sooner or later, and unexpectedly. It may or may not be associated with menstruation, and finally it becomes a per-

sistent ooze and the patient's strength is exhausted. Loss of flesh and anemia will complete the picture.

In the foregoing survey of the early manifestations of malignant disease I have endeavored to present the essential points in a plain, simple way, hoping that thus the important question of what the public should know about cancer may have been given a practical answer.

DISCUSSION.

DR. R. P. REPLOGLE, Altoona: There is one phase of this subject that struck me as being very true; and that is the hereditary part of it. We find that cancer runs in families or groups of families. More than a year and a half ago, I saw a case of cancer of the breast with ulceration and some involvement of the axilla. A complete operation was done in this case, with no recurrence so far. Two months afterwards I was called to see this patient's sister. She had complained of a thin, watery discharge tinged with blood. I examined this case thoroughly, and found that this woman had an old ulcerated cervix, which had healed with the formation of a scar, as these cases usually do. But I found another thing, which impressed me with the fact that there must be a tumor of some kind present. The fundus was large, and not very hard. I advised the patient to be operated on, and she consented. I did complete hysterectomy, and had a section of the fundus examined. A carcinoma was found. The patient had lost five to ten pounds in weight. A short time afterward another sister of these two patients came to see me with reference to what proved to be an adenocarcinoma of the breast; and just two weeks ago, I saw their younger sister, who is not, I suppose, yet out of her teens. I believe she said she was seventeen years old. She has a lump on the left breast, which I diagnosed as an adenoma. I advised her to have it removed, which she is going to do. This is only one family. I have had a number of such familial cases within the last few years. Cancer seems to run in families. Just why this happens, we do not understand, as yet.

DR. W. G. DIETZ, Hazleton: I am not a surgeon, and should like to ask how early these cases should be operated on, especially cases of mammary cancer. In the early spring of last year a very large, strong-looking woman, forty-five years old, of German descent, and apparently in perfect health, came to see me on account of a little lump on the breast that she had noticed first only a few days before. It was in the lower part of the right breast, and was perfectly free and movable. It was

round, and about the size of a walnut. There was absolutely no pain, on pressure or otherwise. I told her that, to all appearances the tumor was an innocent one; but that, considering her age, it would be best to have it removed at once. She consented; and the growth was removed within a week from the time that I saw it, or less than ten days from that time. Dr. Latham, of the State Hospital at Hazleton, operated, and I was present at the operation. The tumor was absolutely without adhesions, and perfectly free and movable; and after removal and sectioning, it was claimed to be nothing but an adenoma. Within three or four months from this time—I should say, first, that the wound healed by first intention, without any trouble, and the patient felt perfectly well. For the next three or four months, the wound showed absolutely no sign of recurrence; but then the patient began to complain of shortness of breath. An intra-pleural cancer developed; and within three months more, she was a corpse.

Regarding the remarks of Dr. Northrop as to the unwillingness of women to submit mammary tumors to inspection by the physician, I would say that I have had three sad instances of this. In three different cases I was called to look at a so-called sore breast, and found that half of the whole gland had been destroyed by carcinoma, so that nothing could be done.

DR. W. A. STEWART, Pittsburgh: I want to say that I consider this subject one of great importance, and that I am in hearty accord with all that Dr. Northrop has said concerning it. There is just one thought, however, that I have on the subject that I should like to mention. That is, that when tumors of the female breast are referred to surgeons, there is often a difference of opinion among surgeons as to the best advice to give these patients. I believe that the effect of this is that the laity fail to understand the importance of tumors of the breast. There ought not to be two opinions on the subject; tumors of the female breast, at any age, should be removed. If all surgeons would take that stand, the laity would understand it. If the growth is an innocent one, the slight operation necessary to remove it does not render the breast objectionable or hideous. It is not necessary to remove the whole breast. A pathological analysis of the removed tumor will then determine whether it is innocent or malignant. The peace of mind that the patient will enjoy, as the result of knowing that the growth is innocent, if this should prove to be the case, is worth a great deal. The very fact that surgeons quibble as to the advice that they should give women in these circumstances has, I think, a very bad effect and gives the wrong impression to the laity.

DR. J. A. FISCHER, Philadelphia: Speaking as a general prac-

itioner, I would say that the results obtained from operation should be borne in mind, when considering whether to advise the patient to be operated on; because you cannot promise them a cure. I have had the same experience that Dr. Dietz has had in small tumors of the breast that were operated on early: within a year afterwards, the patient has died from a return of the cancer. The operation certainly does not cure the cancer. The study of cancer should not be made from the growth end, for there must be something else in the patient that is the cause of the growth. What that is, I am unable to say; but there must be something in the physical make-up or some disturbance in nutrition that lies behind the growth. It would be better, I believe, to go back a step farther, and study the makeup of the patient, than to treat the tumor as the thing of most importance.

DR. D. B. JAMES, Philadelphia: I believe that to-day publicity is the only salvation of women. This publicity applies not only to the women, but also to the physicians themselves. So far as the gynecological patient is concerned, a number of physicians are under a false impression. They have in their minds the old picture of bleeding, pain and leucorrhea. This is a pretty textbook picture, but is quite erroneous. When these symptoms are present, the patient is beyond any therapeutic measure. There are symptoms pertaining to the gynecological patient that precede this typical textbook picture, however. Take a woman that has no discharge or one that awakens into activity at the so-called cancer age, with a pruritis or itching about the vulva and a frequent desire to urinate, we have the pre-eminent symptoms of early carcinoma. When you get a history of bleeding, the chances are that you have involvements indicating that therapeutic measures will be, at best, but temporary. The symptoms that really precede the early symptoms recognized by the majority of physicians are a thin, watery discharge, either white or brown; itching of the vulva, with a frequent desire to urinate; and possibly the history of traumatism, which is undoubtedly a factor in producing the condition, so far as the cervix is concerned. The history brings out the fact that the majority of these patients have had one or more children, the average number being five. An increase in an already existing discharge or a beginning discharge, no matter whether watery or not, beef-brown or yellow-tinged, plus a pruritis and a frequent desire to urinate, constitute a train of symptoms that should suggest at least a physical examination. When you find a laceration, the result of traumatism, then is the time to operate. Cases come to us too late to operate on, and we cannot do

anything; because physicians wait until the textbook symptoms appear.

DR. NORTHROP, closing: I have been very much pleased with this discussion, and I believe that the Society will not lose sight of the main point that I set forth; to acquaint the public with the early manifestations of the disease; and in that way, to seek the co-operation of both the laity and the profession.

HYPERTROPHIED PROSTATE.

BY

F. W. ROBERTS, M.D., PLYMOUTH, PA.

THIS paper is not intended as an exhaustive treatise on the subject nor does it pretend to bring forth anything new.

The object is merely to present the subject from the viewpoint in which I see it, to offer a plea for the more early recognition of this condition by the general practitioner, and subsequent early surgical treatment, and to give what appeals to me as the best technique for its removal.

Those of us who are doing surgery in medium sized cities in connection with comparatively small hospitals, must be guided in our conclusions not alone by the limited number of cases it is our privilege to observe and care for, but also from the extremely large experiences of the most prominent surgeons in connection with the great hospitals in our large cities.

The symptoms arising from hypertrophied prostate are briefly speaking: first, primary; second, secondary.

The primary symptoms include urinary frequency, pain, burning, and tenesmus and are entirely due to obstruction at the neck of the bladder.

If this obstruction is not relieved the secondary symptoms sooner or later develop. These symptoms consist of sleeplessness, loss of appetite, strength and weight.

These symptoms are due to an infection, auto-intoxication or kidney insufficiency, any one or all three conditions being active.

The enlarging prostate sooner or later causes cystitis, residual urine which is infected, possibly an ascending infection of the ureters and kidneys, back pressure on the kidneys limit-

ing their function and causing acute exacerbation of a chronic nephritis and possibly the formation of stone.

The secondary symptoms are never primary and can be prevented by early recognition and surgical treatment of the enlargement.

It has been asserted with absolute truth that male patients with either obscure abdominal or genito-urinary symptoms should be given, routinely, the benefit of a rectal examination.

I do not presume to say that all men with enlarged prostates need operation, as Thompson and Guyon claim 34 per cent. of men over sixty have hypertrophy of their prostates, while only 16 to 17 per cent. of these have symptoms.

Hypertrophy without symptoms of course is not a surgical condition.

Continued catheterization is a dangerous habit and often leads to serious trouble and death from infection in spite of treatment.

An occasional catheterization is justifiable without operation but when persistently called for, a prostatectomy is an absolute necessity.

The average catheter life is not over four years, while if operated early the average life would be much longer.

The symptoms calling for prostatectomy, according to Freyer are:

First: Three to fifteen ounces of residual urine and the patient not using the catheter.

Second: Extreme over distention and dribbling.

Third: Retention from time to time.

Fourth: Ability to void some urine although the patient is obliged to employ catheter to obtain rest and comfort.

Fifth: Entire dependence on the catheter.

Sixth: Complete retention.

He does not consider it wise to operate if there is less than three ounces of residual urine and only slight symptoms, as this condition may exist for years without becoming worse.

It is never wise to do the radical operation during complete retention, the proper treatment being either a supra-pubic or perineal drainage preferably the former. By this method with irrigation and urinary antiseptics with the general care of patient, he can in a couple of weeks usually be gotten into the condition where the margin of safety is sufficient to warrant the radical operation.

Now a few words as to the anatomy and pathology of the prostate.

Grossly the gland in an adult consists of two lateral lobes, the middle lobe and posterior lobe. In the foetus anterior lobes also exist, but most always have disappeared by adult life.

The substance of the gland is made up of a rich supply of a musculo-connective tissue stroma, supporting the true secretive glandular tissue and very rich supply of nerves, ganglion cells and end organs, and blood vessels. The whole gland being surrounded by the fibrous capsule which blends with the internal sphincter and the compressor urethral muscles.

The apex is in contact with the posterior leaf of the triangular ligament, preventing any enlargement in a downward direction.

Normally the prostate is an extra-vesical organ but during hypertrophy it necessarily becomes both an extra and an intra-vesical organ, as it forces its way upward beneath the bladder mucous membrane inside the internal sphincter muscle, which muscle often makes a distinct groove around the prostate.

It has been shown that hypertrophy of the entire gland never exists, and there is a question as to whether or not the process is one of true hypertrophy as it occurs at a time of life when atrophy instead of hypertrophy usually occurs, and at a time when new growths frequently occur.

We will not go into the dozen or more theories as to the cause and character of the enlargement.

Cabot believes the condition is one of the formation of new tissue of adenomatous character, arising in certain portions of the gland and replacing, in whole or in part the normal tissue.

L. B. Wilson states "Hypertrophy of the Prostate, so called represents an enlargement and change of form caused by an increase in the volume of its individual tissue elements, that is of the normal morphological factors of the organ and not a production of heterogeneous elements."

In forty-two cases dissected and studied by Tandler and Zuckerkandl, hypertrophy of the posterior lobe did not exist in a single case, and in none of the specimens was the middle lobe free from the process.

They furthermore state that the enlargement starts primarily in the middle lobe in practically all cases. The peripheral

layers of the lateral lobes not being the starting point in a single case.

Wilson of the Mayo Clinic after examining over four hundred specimens state carcinoma is present in a little over 15 per cent. of all cases of enlargement.

This is another good reason which should tend to make early surgery an absolute necessity as the malignancy is engrafted on the benign process in the prostate just as it is in adenoma of the female breast.

The above observations are important from a surgical standpoint, in that they prove that the capsule spoken of in enucleation of the gland is not the anatomical fibrous capsule but a layer of atrophied gland tissue compressed between the enlarged mass and the true capsule.

Therefore a prostatectomy does not remove the gland in toto as it should always leave the posterior lobe and the periphery of the middle and lateral lobes all of which are atrophied.

The portion removed being the adenomatous overgrowth of the centrally situated glandular structure of the lateral and medium lobes.

In the perineal operation the atrophied non-involved posterior lobe is cut through under the name of the surgical capsule, which is more or less of a destructive procedure. The ejaculatory ducts are not constant in their relative position to the median line and avoidance of them is speculative. Results show also that in the perineal operation incontinence and urethro-rectal fistula occur in a percentage of cases even in the hands of very skillful operators. These two complications practically never occur after the supra-pubic operation.

While the perineal method of Young in the hands of Young, Ashcraft and other expert G. U. men, may be entirely satisfactory, I believe from an anatomical standpoint the supra-pubic method is the operation of choice in over 95 per cent. of the cases.

The percentage of cures will be greater, complications less and in carefully prepared cases the mortality I believe will be about the same in either operation.

There is no question in my mind but that for the general surgeons throughout the country, with their varying degrees of skill and experiences the supra-pubic operation is the one of choice.

The Bottini and all other operations in which the work is done in the dark, should be relegated to the past.

Young's punch operation for small prostatic bars and contractures of the prostatic orifice, however is indicated in a small percentage of cases, diagnosed by the cystoscope, and should be performed by men well trained in the use of the operating cystoscope.

To describe the technique that appeals to me as being the best, will report a case recently operated in the Wyoming Valley Homœopathic Hospital of Wilkes-Barre.

Mr. C. W., aged 78, admitted to men's ward June 1st. He had a left oblique complete inguinal hernia and complained of severe burning pain and tenesmus when urinating which act occurred every hour day and night. The flow often stopping suddenly and starting again after a few seconds. Symptoms started two years ago and were becoming progressively worse.

He had five ounces of residual urine. He voided forty-two ounces in 24 hours. Urine cloudy, alkaline with ammoniacal odor, specific gravity 1.018. Pus and blood cells present but no albumen, sugar or casts of any kind. Cystolic blood pressure 160.

Rectal examination showed a moderately enlarged prostate gland. I operated his hernia, at his request, June fourth, from which he recovered with perfect results **thus far**.

During convalescence he was prepared for prostatectomy by forced water drinking, gr. XXX daily of urotropin, boracic acid irrigation of bladder every six hours.

He got to pass eighty-three ounces in twenty-four day after day and specific gravity remained at 1.020.

He was twice prepared for operation the next day, when he developed an epididymo-orchitis of first the left and then the right side making postponement of the operation necessary.

Finally on July 11th, supra-pubic prostatectomy was performed.

He was placed upon the operating table and his abdomen prepared before starting the ether so as to be able to cut as soon as sufficiently under.

The bladder was filled with water and the clamped catheter left in the urethra.

The incision was made in the Trendelenburg position. This with the bladder distention makes it less easy to open the peritoneum.

This being a fleshy patient the peritoneal cavity was accidentally opened before incising the bladder. The opening was immediately closed with cat gut and no harm resulted.

By incising the prevesical fat instead of tearing it we have much less oozing of blood. The peritoneal fold was pushed well up and a two-inch incision made into the bladder, the upper angle being just below the peritoneum. This is important as a low incision is liable to be followed by a persistent urinary sinus. The bladder was then lifted as far out of the wound as possible, guy ropes placed in each angle of the bladder incision and the wound around the bladder packed off.

I then found and removed with the gloveless fingers of my right hand a small irregular stone the size of a large pea.

The posterior prostatic lobe was found to be pushed up into the bladder, perdunculated and acted as a ball valve.

Two fingers of the gloved hand were placed in the rectum and the gland pushed up into the bladder, while the forefinger of the right hand entered the urethra through the internal meatus.

The roof of the urethra was then torn through between the two lateral lobes, and the pathology in the left lateral, middle, and right lateral lobes separated from the peripheral compressed and atrophied prostatic tissue, and removed after tearing it loose from the urethra behind the colliculus.

The floor of the urethra in front of the colliculus is formed by the posterior lobe which is not involved and is not removed. Consequently the floor of the urethra in this position remains intact also.

Again the floor of the urethra behind the colliculus being formed by the middle lobe, comes away with the middle lobe as it is always involved.

The posterior lobe, ejaculatory ducts, colliculus and the floor of urethra anterior to this, are left in their normal positions by this operation.

Hemorrhage was slight and easily controlled with hot irrigation which was started through the in-dwelling catheter as soon as the specimen was removed from the bladder.

Bladder was closed during irrigation placing a one-half inch drainage tube with side openings in the upper angle and holding there by a purse string suture and later by a single cat gut suture to the skin.

Bladder wall anchored to recti muscles by one stitch on each

side. The space of Retzius was drained with rubber tissue.

The fascia and skin were then closed about the tube which was connected by a glass and rubber tubing with a bottle fastened to the side of the bed.

While on the table he received one pint of saline behind each breast and on return to bed proctolysis was commenced.

The catheter was left in and irrigation performed every five minutes for about twenty-four hours until the blood disappeared from the urine and then about every 6 to 8 hours.

The catheter was removed every third day and replaced by a clean one and left out permanently on the tenth day.

All went well until six days after the operation when he felt chilly and his temperature went rapidly up to 103° , his pulse to 120 and respirations to 28. This was followed shortly by the discharge of pus and some small pieces of slough through the tube. He received baptisia and potassium permanganate 1-3000 irrigation. In a few days his temperature returned to normal and remained there.

Drainage tube was replaced by smaller ones and finally left out on the fourteenth day.

He was out of bed on the thirteenth day, started to void voluntarily with perfect control on the twenty-first day, and was discharged August twelfth, with an extremely small sinus still existing.

Before leaving he took a twenty-nine sound with ease.

A letter from patient dated August twenty-first, states that he leaks no more, urinates freely with perfect control and no distress whatever.

He voids about every hour during the night and much less often during the day.

His general condition fine and is able to walk about the street.

In conclusion I wish to make a most earnest plea not only for an early recognition of prostatic hypertrophy by the general practitioner, but that he refer him to a surgeon before secondary symptoms and changes develop, that he may have the benefit of a supra-pubic prostatectomy.

DISCUSSION.

DR. W. C. HUNSICKER, Philadelphia: I congratulate Dr. Roberts on the presentation of this paper: because there are points in it that are very, very valuable. Regarding some of

these points, I agree with Dr. Roberts. I do not agree with him that perineal prostatectomy is now the method of choice; although I still admire the method that was taught me by Dr. Ashcraft, which I at one time did exclusively. Since acquiring some experience with the use of the cystoscope, we are recognizing that certain types of prostatic overgrowth are not adapted to the perineal incision, and that quite a high percentage of these growths encroach upon the bladder cavity. In that case, it is impossible to remove the growth by the perineal route; and the suprapubic method is attended with but little danger, if you do not use the knife too much. Cutting of the perineum is most commonly due to not using the finger to separate the abdominal muscles. I cut the skin and fascia, and then put aside the knife, using it only when I have separated the abdominal muscles and the perineum, to cut down to the bladder wall. I then incise the bladder and remove the growth.

So far as early operation on the prostate is concerned, I would say that I recently read in the literature—and it is borne out to a certain degree by experience—that early operation is not advisable. Patients with a moderately infected bladder seem to get along better after operation than do those who have no infection at all. Following an operation in cases in which there is normal urine and no septic condition in the bladder, a violent septic condition is sometimes seen, with anuria. The patient seems not to be so well as one who has had a bladder infection. The old chronic condition seems to produce an immunity to a new infection. That theory, at any rate, has lately been advanced; and it has been borne out by experience.

Dr. Berger, of New York, has a method of operating in these cases which Dr. Roberts has referred to as the severest type, cases of complete retention of urine. He does this operation in two steps. He first does a suprapubic cystotomy for drainage; and, a week afterwards, does an enucleation of the prostate. He claims a very low mortality for this procedure.

DR. D. ROMAN, Philadelphia: I have enjoyed the paper immensely. Like all Dr. Roberts's work, it is a success. I was particularly impressed with the sixth reason he gave for prostatectomy and the need of emphasis on the use of the catheter with caution in the cases of complete retention; because when the patient comes to the surgeon, an attempt has always been made at catheterization with a failure—or if with a success, it has been employed without discretion. There is a class of cases, to which Dr. Hunsicker has referred, that cannot be treated conveniently except by operation; but the only way to spare them this ordeal is by using wisdom in employing the

catheter. A patient seventy-five to seventy-eight years old showing complete retention of the bladder contents, if successfully catheterized, should be carefully watched and allowed to void urine naturally, if he can. In other words, a second catheterization should be avoided. Taking for granted that the first is successful and without hemorrhage, the second should be a matter of great judgment; because it is possible for these patients, when we relieve the hyper-distention, to gain a little power to void naturally, and this should be nursed. The second or third catheterization will make a choice necessary between a catheter life and operation. There is a class of cases that, if judiciously handled at the first catheterization, can be bridged over the danger of an operation.

In regard to the question of the choice of an operation, I would say that I have advocated and persuaded for years the perineal method. Now I do a suprapubic operation very often from choice; but whenever cystoscopy shows it to be feasible, I prefer the perineal route, because of the better drainage. The prostatic hypertrophies encroach on the bladder; but the prostate is an extravescical, and not an intravesical organ; and in our common cases, the perineal prostatectomy is easily accomplished, and has no mortality, because we see everything. Every step of the manipulation is under our eye in the class of cases that are usually the most undesirable, on account of the peculiar inactivity of the kidneys. We can choose our cases and, in the majority, probably select the perineal route; especially if we get them early enough to do the most good.

DR. W. A. STEWART, Pittsburgh: There is one point that should be considered in choosing the method of operating in these cases; and that is, that the one thing that these patients will not forgive you for is destroying function. Therefore, if it can be determined that one method gives better function than another, that is a good reason for selecting it. It is my belief, and is coming to be the consensus of opinion, that the suprapubic route gives better function. That is, the anus and the anal ring are not injured. If you render a man so that he cannot control function, he had rather the operation would not be successful. You can sacrifice anything else to function. The majority of these cases can be operated on suprapubically, and function remains. The other route leaves some cases without function. That is my reason for selecting the suprapubic route, although the other operation may be more easily accomplished.

DR. J. M. HEIMBACH, Kane: We must have some one on the other side of the fence, and I wish to speak from the medical standpoint. I have had two cases within the last two years. One patient, eighty-four years of age, was a farmer; and the

other, eighty-one, a whiskey seller. They both had hypertrophy of the prostate, and could not pass their urine voluntarily. At first, I had to use a catheter; but inside of a week's time, they could pass their urine normally, and very seldom had to resort to the catheter, Thuya in the thirtieth dilution did the business in both cases. Now, if you can accomplish something like that without an operation, why not do it? I admire these surgeons. I am a surgeon myself; but I do hate to employ surgery when I can accomplish the result with a homeopathic remedy. We should be honest enough to try the homeopathic remedy before resorting to operation, unless it is absolutely necessary to give the patient instant relief.

BUREAU OF PATHOLOGY AND PATHOLOGICAL ANATOMY

THE CURE OF SYPHILIS FROM THE LABORATORY STANDPOINT.

BY

S. W. SAPPINGTON, M. D., PHILADELPHIA.

THE object of this paper is to emphasize the necessity of laboratory rather than clinical standards of cure in syphilis

With the introduction and wide employment of the Wassermann reaction, it soon became apparent that the old or clinical system of treating syphilis was grossly inadequate. This is nowhere better stated than by such an excellent clinical authority as Fordyce,¹ who says: "Before the introduction of the Wassermann reaction the treatment of syphilis was more or less a matter of guess work. While it is doubtless true some patients were cured by the methods then in vogue, and others possibly treated for too long a period, the observations which I have made during the past three years show that the majority of such patients still retained their infection. The idea which prevailed among physicians and is still prevalent among the laity, that one attack of syphilis confers immunity, is chiefly if not entirely due to the fact that syphilis was seldom cured under the old methods of treatment. It is impossible to give the average percentage of cures formerly obtained, but from my findings and the application of the Wassermann test to cases treated

1. Fordyce J. A. : *Jour. Am. Med. Assn.*, 1912, lix, 1231.

five to twenty-five years ago, I should say not more than 20 to 25 per cent. . . . The treatment of syphilis is no longer the control of symptoms, but should be undertaken with a full appreciation of the serious nature of the infection."

The serologic and etiologic studies of the last few years have established many valuable facts. They have shown that tabes and paresis are as truly syphilitic as are the ordinary skin lesions. They have shown that most aneurysms and many cases of aortic regurgitation, angina pectoris and aortitis are simply part of a syphilitic process. They have shown that certain hepatic and other deep lesions are truly luetic. The demonstration of spirochaetes in tabes, paresis and aortic and cardiac conditions has been conclusive.

Furthermore, and of much importance is the theory, now backed by considerable evidence, that there is a septicaemia in the primary and early secondary stages which serves for the permanent or final localization of the spirochaetes. Thus, though deep lesions, such as the nervous and vascular types, develop late, the organisms are deposited in these situations early in the disease. It seems, too, that the strains of syphilitic spirochaetes vary, and while certain tissues are invaded indifferently, other parts are subject to the particular affinities of these strains. The skin and nervous system, for example, are mentioned by Nichols² as extremes. The impression has been steadily growing that there is a permanent special luetic parasite involved in the production of nervous syphilis. Equally interesting is the inhibiting effect of local lesions. Just as an individual still syphilitic does not suffer a second infection, so a lesion in one part of the body inhibits or protects other parts of the body.

There is confirmation and practical application of these statements on the clinical side of syphilis. The use of the newer cholesterin antigens and the application of the Wassermann test to the spinal fluid has shown a percentage of positive results in tabes and paresis quite comparable with figures in active secondary syphilis. But still more important, positive Wassermann reactions are obtained in the spinal fluid early in the secondary stages before the establishment of organic lesions, thus giving ample warning. Such cases, either early or late, may show a negative Wassermann with the blood serum though the spinal

2. Nichols H. J. : Jour. Am. Med. Assn., 1914, Ixii, 466.

fluid is distinctly positive. This explains the early errors in pronouncing cases negative or cured, the blood only being examined.

It is a very old clinical observation that tabetics and paretics are the cases which have shown very little of the ordinary signs of syphilis, and White,³ in a recent statistical study, has been able to prove the paucity of skin and other common symptoms of the secondary and tertiary stages. Vice versa, cases with abundant cutaneous and other superficial lesions are unlikely to develop nervous syphilis. These facts are suggestive of the inhibitive effect of one set of lesions upon the other and of the probability of different strains of spirochaetes inducing the conditions. This probability is strengthened by morphologic differences in the spirochaetes from various lesions.

In the matter of syphilis of the heart and aorta, Longcope⁴ has shown that while the infection of the part probably takes place during the secondary stage, the process usually remains latent or unrecognized for a period of about sixteen years.

It is well known that positive Wassermann reactions may frequently be obtained when there is no clinical evidence of syphilis. But it has not been sufficiently emphasized that the serious and fatal forms of lues such as those of the nervous and vascular systems are the very types exhibiting few of the superficial and ordinary clinical evidences of the disease. Nor has it always been kept clearly in mind that these forms commonly present a latent or silent clinical period of from ten to twenty years in which the original infection is overlooked or forgotten, though a positive Wassermann reaction may be quite constantly obtained in the large majority of cases. It is true, of course, that only a minority of syphilitics develop these serious forms of the disease, but their uniform fatality makes this aspect of the question of primary importance especially as it is obvious that a case of tabes or paresis or aortic aneurysm means an insufficiently or unsuccessfully treated individual.

The time to treat tabes or paresis is not when it is a fully developed clinical entity with a Wassermann-fast⁵ spinal fluid and practically hopeless, but when, without any clinical signs, the blood or spinal fluid shows a positive Wassermann reaction which makes tabes or paresis a future possibility.

3. White C. J. : Jour. Am. Med. Assn., 1914, lxiii, 459.

4. Longcope W. T. : Arch. Int. Med., 1913, xi, 15.

5. Kaplan D. M. : Jour. Am. Med. Assn., 1913, lxi, 2214.

Clinically, then, we cannot say when a case of syphilis is cured. The Wassermann reaction is probably by no means the last word in the diagnosis of syphilis but it is certainly the best criterion to date and its presence or absence a far superior guide to any other in the diagnosis, prognosis and treatment of lues. No case of syphilis should be considered cured until the Wassermann reaction is repeatedly negative in the blood and also in the spinal fluid. A single test is not of great value, as Craig⁶ has shown the reaction may vary day by day. Neither is a negative result in a patient who has been indulging in alcohol or is still under active treatment. Nor must negative blood Wassermann's alone be considered final. But if a case without treatment exhibits no clinical signs for a year, and during that time give repeated negative Wassermann reactions in the blood and spinal fluid, the case is very likely cured, and if the time limit be raised to two years the guarantee of cure almost amounts to a certainty. If these higher standards were enforced, it would surely prevent the development of many cases of tabes, paresis, aneurysm, aortic regurgitation, hereditary lues and similar baneful effects of the syphilitic invasion.

DISCUSSION.

DR. B. FRANKLIN HILL, Philadelphia: Dr. Sappington spoke of the fact that it might be necessary to make two or three examinations before determining whether the patient had syphilis or not. About three years ago, I had as a patient a man who had one Wassermann taken with a negative result, and then had another taken with a similar result. A third Wassermann, however, proved positive. I do not know why this should have been so, except that, as Dr. Sappington says, the condition sometimes changes from day to day.

DR. J. M. HEIMBACH, Kane: I had a little experience last winter with a case of deafness that developed in a patient of mine. There was no reaction from bone conduction or air conduction whatever, yet I could not locate any lesion by external examination of the ear. The tympanum was normal in every way; and I was "up a tree," so to speak. I had a Wassermann examination made, and it proved positive. By putting the patient on potassium iodide, one side cleared up entirely. Hearing in the other ear had been dead for some time; yet the woman did not realize it until she became deaf

6. Craig C. F. : Jour. Am. Med. Assn., 1914, lxii, 1232.

on the other side. This shows that there are sometimes these hidden lesions, and that in these cases the laboratory diagnosis will help us out. You cannot deny the value of these examinations.

DR. F. W. ROBERTS, Plymouth: I should like to speak of a case that I had occasion to send a specimen from to Dr. Sappington some time ago, as it seemed peculiar to me. The case was a policeman of our town who had been exposed to infection in his younger days, but was at this time a married man with a family, had attacks of laryngitis that caused entire loss of voice for a number of days. He fell into the hands of a throat specialist, who informed him that he had syphilis; although he never gave any other indication of this disease. On the strength of this opinion, he went to a physician who was in the habit of administering salvarsan to all cases of suspected syphilis, and had a couple of injections. He then waited for a number of months; but he became very much worried about himself. He was continually thinking about the matter, and wondering whether he had ever had the disease. I took a specimen of his blood, and sent the serum to Dr. Sappington, three or four months after the injections; and Dr. Sappington reported a negative reaction. Two weeks before this specimen was taken, the man had exposed himself to possible infection. In the course of about six weeks after he had sent the other specimen he developed secondary lesions, with a sore on the penis. I sent a specimen to Dr. Sappington, and got the report of a decidedly positive reaction, showing that the man had infected himself two weeks before the first specimen was sent down, on which there was a negative report.

PROSTATIC INFECTIONS FROM A CLINICAL STANDPOINT.

BY

J. M. KENWORTHY, M. D., PHILADELPHIA.

THE prostate may be infected by any of the bacteria found in the urethra or bladder.

Gonorrhoeal infection is, of course, the most important; comprising probably ninety per cent. of all acute infections, and being present, with or without other bacteria, in about seventy-five per cent. of all chronic infections.

Tubercular infection is not common. It is usually a part of tuberculosis of the kidney, bladder or epididymis.

I wish, however, to call attention to the fact that gonorrheal infection of the prostate predisposes to later tubercular infection, through lowering of tone and breaking down of resistance of tissues. This same relationship, by the way, is seen in the liability of tuberculosis to follow gonorrheal infection of the epididymis.

This fact gives us an added reason for the thorough cure of gonorrheal prostatitis. It should also sound a warning against a too strenuous course of treatment, which in unskilled hands might be carried to the point of traumatism.

The prostate may also be infected by any of a number of bacteria, the most important of which are strepto- and staphylococci, and colon bacilli. These and other bacteria are often found in the healthy urethra. Any abnormality resulting in congestion and inflammation is sufficient to stir them up to activity, and infect urethra and prostate.

Such a condition might be brought about by trauma, whether from external violence or instrumentation. Sexual excess or irregularities play an important role by causing congestion. Exposure to cold as from sitting on cold steps or wet ground is a possible cause. Excessive alcoholic indulgence is a frequent cause, especially if associated with exposure to cold.

Infection by these non-specific bacterial and gonorrhoeal infection are frequently co-existent or superimposed one upon the other.

The acute and hyperacute forms are usually gonorrheal. As a case progresses, however, especially if it becomes chronic, infections of various other bacteria are superimposed upon the gonorrheal infection. Therefore we observe that whereas the discharges of acute conditions are loaded with gonococci, the chronic discharges are almost if not entirely free of these organisms, non-specific bacteria predominating.

This does not always mean, however, that the gonococci have permanently disappeared. They may lie dormant in a chronically inflamed prostate, sometimes over a long period of time. Congestion of such a prostate will wake these germs to activity, resulting in a re-infection of prostate and urethra with gonorrhoea.

For this reason the chronically inflamed prostate, particularly in the gonorrhoeic should be most thoroughly treated and cured.

Clinically, prostatitis is best considered as acute and chronic. Both may be catarrhal, follicular, or parenchymatous, as ducts, follicles and parenchyma are involved.

The acute parenchymatous form is likely to go on to abscess formation.

The chronic forms are usually catarrhal and follicular, but may be parenchymatous.

Acute prostatitis is usually a direct extension of inflammation from the posterior urethra into the ducts and follicles of the prostate. This does not add much to symptoms of acute posterior urethritis unless the parenchyma of the gland is involved. If that occurs and abscess is threatening, symptoms, of course, are severe and cause great prostration. The condition is, however, under proper care, very amenable to treatment, and is not a long standing condition unless it becomes chronic.

The chronic form, however, while it does not present the alarming picture of the acute, is very chronic in its course and most stubborn to treat.

Most chronic prostatitis is a continuation of an acute attack, which has probably been gonorrhoeal.

A large number of cases, however, are entirely independent of gonorrhoea or of a preceding acute attack being caused by repeated congestions of the prostate by irregular sexual practices, most notably by masturbation, withdrawal, or prolonged unsatisfied sexual excitement.

These factors are often present, also, in cases having as a basis chronic gonorrhoea, and by keeping up a congestion of the prostate, aid in the maintenance of the chronic gonorrhoea.

Clinically, these two types of chronic prostatitis, those having as a base chronic gonorrhoea, and those dependent upon sexual irregularities are much alike.

Symptoms may be classed as urinary, referred, and sexual. Persistent urethral discharge is common, the pus-discharging prostate serving to maintain a chronic infection throughout the urethra. The discharges from the prostate itself may be purulent or mucoid.

Urination may be urgent and frequent. It may be difficult even to the point of partial or complete retention.

Referred and sexual symptoms are numerous. They include

pain, itching, or burning sensations intermittent in character and apparently without cause.

These disturbances in a nervous individual cause the condition which we know as sexual neurosis. The sexual neurotic is a very unsatisfactory patient to treat. He is in a deplorable state of mind and we are inclined to regard his ailments as imaginary. Let us not forget, however, that his hypochondriacal state of mind has a physical basis in his infected prostate.

I have observed by the use of the cystoscope that many of these patients have a markedly congested trigone.

In concluding allow me to repeat: That the non-specific infections of the prostate are of principal importance in their relationship to the more important gonococcic infection.

That while the acutely inflamed prostate is, for the time being of great moment to the patient, it is more important in its liability to go on to chronic inflammation.

That the chronically infected prostate merits especial consideration as a cause for the maintenance of chronic gonorrhoea with frequent re-infections, and also as a physical basis for various neurotic symptoms which may make a man a chronic invalid.

DISCUSSION.

DR. W. C. MERCER, Philadelphia: I should like to ask whether, if the prostate is infected with the gonococcus, the patient ever entirely gets well of the infection; or whether there is a chance still that a child may have its eyes infected. If so, how long after an attack does this risk continue, or may it happen at any time?

DR. KENWORTHY: I do not consider gonorrhœal infection of the prostate to be incurable. Most authorities agree that the gonococcus disappears from the prostate in from six months to two years, with possibly three years as the outside limit. Cases in which reinfection has apparently occurred after five or ten years or more are very rare and are open to the suspicion of a later infection.

DR. W. C. MERCER, Philadelphia: I had one or two cases in which the baby had infected eyes, but in which I did not get a history of gonorrhœa until I questioned the fathers very carefully and found that they had had it at least a year before.

METASTATIC JOINT INFLAMMATIONS.

BY

J. M. HEIMBACH, M. D., KANE, PA.

It is becoming more evident as time rushes on, and the scientific investigator and experimenter intensifies his powers of observation and mental acumen that the medical term "rheumatism" is becoming more and more obsolete. The uric acid theory is in the coffin and the day of interment is at hand with no mourners except the advertising specialist to attend the obsequy.

The microscope, the culture media, and inoculation of cultures is rapidly clearing the field of doubt and gives us a clear conception of the subject, and forces us to classify most all joint inflammations under *infectious diseases* if not of a traumatic nature. If a joint keeps up its tenderness and swelling after nature has had ample opportunity to restore the bruised and torn tissues to their normal function, an invading army of low grade bacteria are, no doubt, engaging the leucocytes for supremacy. We have all the proof needed that repair of tissues takes place without inflammation if no infection is present.

Our text books say very little on the subject of joint inflammations or infections. More information can be culled from journals and clinical reports that meets the approval of the inquisitive mind, and eventually the distinct clinical history and picture together with the pathological investigations and reports will give you the cue to similar cases that may come up in your practice. A correct interpretation of all the symptoms after knowing the chronological history of the case will invariably furnish you with the necessary facts to make your diagnosis.

I will discuss in particular metastatic infections where only one or two joints are involved. Such a condition follows an infection of a bacterial nature which have their entrance into the system at some other part of the body.

To illustrate, I will give you the history of a case I had last winter where the patient was not well for at least a month, then was taken with a slight sore throat and aching pains all over the body with a temperature of 101 and pulse 96, a slight

redness in the throat not even amounting to a tonsillitis. She improved from that condition and was able to attend a social function but experienced some pain in the right knee the tenth day which increased in intensity until she was unable to move the joint in twenty-four hours' time without suffering agony. There was some swelling and a good deal of tenderness on the inside of the joint, which point was more or less sensitive for years on account of a fall. The synovial sack, however did not distend sufficiently to cause any floating of the patella at any time but seemed to be more a periarticular involvement. Palpation revealed a boggy sensation rather than a fluctuation. The joint was not asperated and thus a correct bacteriological diagnosis was not demonstrated. There was some enlargement of several inguinal glands on both sides and also a few cervical glands on the right side. The temperature rise, while it lasted, was only of short duration in the afternoon from three to nine o'clock, and at no time could I solicit any sign of a chill throughout the course of the trouble.

According to Murphy, this history of throat trouble followed by an inflamed joint ten to fourteen days after, is classic. It takes just about that length of time evidently for this particular species of bacteria to develop and manifest their activity in the joint involved. This probably is the staphylococcus or influenza bacillus and is not so destructive in nature. Should the throat trouble be followed in a day or two with a chill and joint involvement, a good deal more serious condition would present itself and the deadly streptococcus, no doubt, is operating in that joint, doing irreparable damage. The severer the chill and acuter the onset, the more destructive it will be for that joint.

The typhoid bacilli and pneumococci are known to have caused these metastatic inflammations and if such a joint involvement should follow an attack of pneumonia the sputa should be examined for the specific germ.

Murphy estimates that an arthritis following a Neisserian infection takes place from the eighteenth to the twenty-second day in about 96 per cent. of all his cases. These cases still go by the name of gonorrhoeal rheumatism. The nomenclature should be changed to metastatic infection due to the gonococcus of Neisser. This likewise is very destructive if preceded by a chill and only one joint involved.

These joint infections accompanied by a chill invariably become ankylosed unless the proper treatment is instituted.

I have mentioned five distinct bacteria thus far that are known to produce joint infections. Their clinical history and course are pretty well understood and form a group by themselves. This group produces the acute forms of joint infections and the old saying "caught a cold" as an exciting cause only bears a similar relation as does the match that ignites the fuse which sets off the explosion.

Rosenow in Chicago recently demonstrated the infectious nature of arthritis deformans by making cultures of nearby lymph nodes and isolating the bacteria causing the same.

PATHOLOGY.

The pathology of these infected joints varies according to the severity of the inflammation. The synovial membrane becomes congested, thickened and opaque. The surfaces are brought in close contact by contracting muscles controlling the involved joint. These are spastic contractions on the part of nature to immobilize which may lead to pressure necrosis and ulcerations of larger or smaller areas. As these eroded areas extend the deeper tissues, cartilage and bone itself becomes involved successively by continuity. The cartilage becomes fibrillated, softened and destroyed, wherever this very vascular, opaque condition of the synovial membrane comes in contact with the cartilage. If the two opposing surfaces are involved the subsequent granulations that are thrown out intermingle with each other and is ultimately converted into dense fibrous tissue which not only in part or wholly obliterates the joint cavity but forms complete ankylosis. Not only are the articular surfaces involved but the periarticular tissues and neighboring tendon sheaths often become infected either by continuity, the lymphatics, or the blood current direct. Reported orthoplastic operations clearly show this to be a fact where the operator could demonstrate thickening of the capsule and even sterile abscess cavities.

General systemic symptoms manifest themselves in the form of enlarged lymph nodes in different parts of the body together with a form of toxemia. We have a septic temperature and leucocytosis and later a secondary anemia develops.

Treatment.—Taking the above definite facts into consideration, a course of treatment can be outlined that will meet with better success than we could hitherto hope for. In scanning the

literature of the past, indeed, nothing hopeful can be learned. A grave prognosis as far as a useful joint is concerned, stares us in the face in all cases where a chill accompanies the metastatic joint involvement.

The joint must be put at rest at once to alleviate pain, but a method of joint rest must be used that affords the best physiological repair and produces least destruction to the opposing surfaces. Muscular spasm must be overcome if possible by Buck's extension and the joint surfaces separated as much as possible. Overdistension should be relieved by aspiration. It is needless to say that pus should be evacuated if present and drained. A plaster cast is the best thing for a tubercular joint where healing and cure is by encapsulation, but where the healing is brought about by the aid of the polynuclear leucocytes like in the metastatic cases it invariably gives you an ankylosed joint and is positively contraindicated. According to Murphy, an infected joint should never be put in a cast. If the infection is of a mild type without a chill you seldom get ankylosis regardless of the local treatment. Absolute immobilization of the joint tends to ankylosis beyond a doubt. Murphy injects a two per cent. formalin solution in glycerine that is 24 hours old in the joint cavity after aspirating the excess fluid and puts it up in extension and thus claims to cofferdam the surrounding lymph space and produce polynuclear leucocytosis to the greatest degree. He, himself, claims that this is not the ideal method and hopes some day a way will be discovered where the condition can be treated through the blood.

The personal equation manifests itself here as in most other diseases. The narrow view that the local manifestation in any disease is all you have to consider is the biggest stumbling block in the profession. As soon as we recognize local or objective symptoms as end results or at least as the beginning of the end results, you at least investigate the disturbed vital forces that cause them and aim to strike at the fountain head of the disorganized forces within.

The only conclusions that we can arrive at in treating these cases is that we must give them constitutional treatment. Their vital forces must be strengthened that they can resist the bacterial development that causes the inflammation. Immunity must be established before we can make much headway with any treatment. This is the reason that these cases are long drawn out and are tiresome to both patient and physician alike.

You can give them tonics if you choose with the best hygienic and dietetic care, but we, who are initiated into the workings of the law of similars, know that the homœopathic remedy is the best tonic that can possibly be administered. In one of my cases pul. undoubtedly influenced the condition of my patient most decidedly and made a perfect recovery. Another patient made no improvement until she received sulph. 200th every third day, although a previous administration of sulph. 12x every three hours had no apparent effect. Sulph. 200th improved her general condition before the local symptoms abated. It improved her appetite. Pink and rosy cheeks took the place of the pale ones. A better spirit with cheerfulness conquered depression. The joint inflammation subsided and could begin to move her limb. This was sufficiently marked in a comparatively short time to warrant a claim that these drugs acted favorably in these two cases.

Bryonia, bell., arnica, rhus tox., lyc., and merc. are all suggestive remedies that have clear indications along those lines and can be looked up in our provings. The symptom complex of the patient together with the local condition present must necessarily furnish you with the facts on which you must base your prescription.

THE ETIOLOGICAL ATTITUDE TOWARD DISEASE.

BY

JOHN G. WURTZ, A. M., M. D., PHILADELPHIA.

FROM time immemorial men recognized diseases and endeavored to cure them by certain therapeutic agents—which by time and tradition were said to be beneficial—and which agents corresponded in crudeness to the prevailing theory of disease. There were many theories and a great variety of treatments. To reiterate all would consume volumes; but to mention a few is necessary for the sake of comparison with our modern methods. At one time it was believed that disease was an evil spirit or demon that entered the body and there wrought various ills. The therapeutic method corresponding to this belief was to

drive out the evil spirit by tom-toms or charms, or to lure it out by promises or prayers. In any event to remove the cause. Later and for a long time, the Hippocratic theory was in vogue. This theory gave man four humors: blood, phlegm, yellow bile, and black bile. An improper mixture of these, it was believed, resulted in disease, so here the excessive humor or humors were determined and removed. Thus, if the bile was in excess, purgatives were given; if blood exceeded the patient was bled. Again, so crude the theory, so crude the treatment. In short, nearly every teacher or school of medicine had a theory, and with the multiplication of these came the wholesale introduction of therapeutic agents from amulets, on through plant extracts, chemicals, and the lance to electricity, vaccines and radium.

In the eighteenth century auscultation and percussion were first used in medicine. With the advent of these came a truer recognition of disease, a more proper grouping, and the demonstration in the patient of pathologic changes, such as enlarged liver, consolidated lungs, and leaking heart. Now too came books on physical diagnosis, and the addition by various clinicians, of finer signs of differentiation which could only be determined by experts.

The introduction of the germ theory by Pasteur, and his works, along with those of Koch, completely revolutionized medicine. These men took medicine from the field of art and placed it in one bordering upon, if not in, science. With the germ theory came the beginning of preventive medicine. It is of interest to note that Pasteur, a chemist, was the exponent of the germ theory, and that he is quoted as having said that, "Chemistry will have the last word." His prediction seems true; for now since bacteria as living bodies have been more or less properly grouped, and their relationship to disease fairly well understood, their by-products—if agglutins, toxins, etc.—can be so called—which form in artificial culture media and in the body of the host, are now more or less properly grouped and studied from the standpoint of biological chemistry. Proof of this is seen in the current medical literature where works on immunity and sero-diagnosis are every day published.

Going back again to former times, can be seen the attitude of our profession toward disease, in the study of symptoms alone. To confirm this one has but to review the etymology of the names of many diseases. Thus, typhoid, "resembling

typhus," and typhus from the Greek, meaning "stupor." Diphtheria from the Greek, meaning "skin or membrane." Diabetes from a combination of Greek and Latin roots, meaning "I pass." Erysipelas likewise from a double root and meaning "red skin." Leukemia, "white blood"; rickets, "the spine"; measles, "spotted"; pneumonia, "disease of the lungs," and other names whose meanings are obvious, as, relapsing fever, scarlet fever, yellow fever, hydrophobia, and pernicious anemia. All these given to diseases from their symptoms, and all coming down from—as might be said—ancient times.

Using typhoid fever as an example to demonstrate the change of attitude. It was so called because it resembled typhus, and typhus was named from the stupor in which the patient lies. Then was recognized the fever, rose spots, and enlarged spleen along with the changes in the intestines. No matter what the pathology, the treatment was symptomatic. The axiom, "We must treat the patient and not the disease," was applied. To-day the disease is treated. A vaccine is not necessarily indicated in headache, fever, enlarged spleen, or rash; but it is indicated in many cases of typhoid fever. So instead of a variety of drugs to cover the symptoms—and often a shot-gun prescription—we administer one remedy. The difference is, that nearly every patient is a law unto himself, while nearly every typhoid bacillus exists according to the same laws. Thereby simplifying the treatment. What difference does it make which symptoms are presented by the malarial patient? Knowing the cause of the disease and the therapeutic specific, quinine is administered. When diseased heart valves were recognized they were "toned up" by the favorite heart remedies. The pathologic changes were observed, the cause of these seen in rheumatic infection, and to-day vaccines—treating the cause—eliminate the likelihood of endocarditis. The early and accurate diagnosis of syphilis, no matter what organ it effects, eliminates from future generations the occurrence of aneurysm and tabes dorsalis, or what not.

Unfortunately for many of the acute exanthemata we have no cure. When the causes of these are discovered, they will be as little dreaded as is diphtheria in a city where physicians can be secured at any time, and where antitoxin is on the shelf of nearly every druggist.

Our etiological attitude toward disease is not only manifested in modern treatment; but also in the prevention of disease.

And here has aided the advances of civilization and what may be called hygienic legislation. Modern improvements have helped much in the work of preventive medicine. For example, the telephone and telegraph enabling the ready intercommunication between cities, districts, or countries thereby warning other localities of the presence of epidemics. This eliminates from the future history of man, fatal epidemics such as depopulated all countries in former times. Though it may seem exaggerated, the old age and widows' pensions prevent disease, by helping to prevent the poverty that breeds ill health. Our present good roads mean health, for good roads are dry roads, and often oiled. The oil allays the dust, and the proper drainage of the roads affords dry feet for pedestrians, while it eliminates the breeding places for mosquitoes and flies. Then, too, comes the study of occupational diseases and laws to prevent the same. How often did the lead worker take the colic, as a sailor takes ship-wreck—as part of the business? Now with proper care of the teeth and hands, the cases of chronic poisoning are fewer. This applies to all poisoning from industrial materials.

The removal of tonsils and adenoids is known by all to be beneficial to children. Also the correction of refractive errors adds to the chances of the child; besides correcting faulty positions which the child, in straining, assumed, and which positions often lead to orthopedic changes. Further, the bath tub and free swimming bath promote the personal cleanliness that speaks for health.

Unfortunately, additions to our knowledge of infectious diseases have been—up to the present at least—of more practical value in the diagnosis and prevention of disease than in the cure. More energy is expended in the prevention of all diseases than in their cure. The cause of weak and feeble minds is seen in heredity or environment, syphilis, alcoholism, and drug habits. Legislation to-day, in many places, prevents as far as possible the marriage of those mentally deficient, those with syphilis or other transmissible diseases, and those who are chronic alcoholics, or drug users. The environment of children is improved. From parents who are irresponsible the children are placed in proper homes or in institutions to care for them and lead them, perhaps, from criminal ways.

Witness the reduction in tuberculosis by preventive measures alone! The slogans, "swat the fly," and "safety first," are in a

degree passwords to health. The abolition of the common towel and common drinking cup has, no doubt, prevented to some extent the transmission of disease. And to-day in considering the cause of disease, the patient is instructed not only to care for himself; but to protect others from himself. Here, too, must be considered the supervision of cases by trained nurses, as a factor of safety.

All specialties evolved from the general practice of medicine. Men became interested or skillful in treating certain varieties of cases, and treated these only. Now the era of specialists is here and expertly trained men are working along many lines. With this class of men came not only preventive measures; but an early recognition of conditions which if allowed to continue would perhaps be incurable. No more do we have the tremendous infant mortality due to the so-called "summer complaint." The pediatricist, by careful study and research, has placed the cause of this condition in impure milk. Laws have improved the milk supply and thereby reduced to a minimum the fatal diarrhœa of infancy; while the open air stations, social service workers, district nurses, and mothers' clinics have all added to the baby's chance for life. Instead of having the gynecologist do a ventral fixation late in her life, the woman has her perineum repaired at the time of delivery. Thanks to the obstetrician. In surgery, gangrene was once treated by a radical operation, later by antiseptics, and now by constitutional treatment—treating the cause.

Following the advent of the specialist came the special hospital for the treatment of certain diseases. Thus we have the cancer hospital, the tuberculosis institution, the eye hospital, etc., where expert work is carried on, not alone in treatment; but in etiology, diagnosis, and prevention. It is in the laboratories of such institutions that the work is being done. It is the laboratory worker who discovers the cause, will make an early diagnosis, find a means to prevent, and if possible a cure. But especially does the laboratory play an important role in diagnosis. And to-day diagnosis is the key-note of medicine, because the cause of disease is considered.

Bacon laid down: "To know truly is to know through cause." And Adami says. "He is the scientific physician or surgeon who seeks and determines the cause, for only when the cause is deducted can the treatment be rational." Ruskin says: "All experience goes to teach us, that among men of average intellect

the most useful members of society are the dissectors, not the dreamers." Herein is the plea for the research man, to establish new facts, and to prove or disprove old theories. "To untangle the distorted evidence and conflicting conclusions of a generation means progress even if no positive results follow. Nothing is so detrimental to scientific progress as the persistence of an erroneous theory. It diverts the investigator from the more direct road to truth; and what is equally unfortunate, it sometimes encourages the practitioner to indulge in therapeutic measures which are based on an entirely mistaken conception of disease." (Editorial, *J. A. M. A.*, Vol. LXII, No. 7, Feb. 14, 1914.)

BUREAU OF PEDIATRICS

CONVULSIONS IN INFANCY.

BY

C. SIGMUND RAUE, M. D., PHILADELPHIA.

THE cause of general convulsions in infancy is looked upon in the majority of instances as being "idiopathic." The abnormal tendency which infants show to convulsions has been ascribed to instability of the motor centres in the cortex of the brain due to a lack of development of the inhibitory centres. This explanation has been generally accepted until recently. We are now, however, obliged to take a different view of this matter since the new facts that have been brought out by advanced physiologic studies, especially in the domain of the metabolism of the mineral salts, offer a more definite knowledge of the etiology of convulsions. The role of certain internal secretions in the metabolism of the mineral salts also has a direct connection with the convulsive tendency.

The immediate cause of general convulsions is cortical irritation in the majority of instances. There is no doubt, however, that certain children will react with a convulsion to a stimulus which in other children would fall short of precipitating such an attack. A strong peripheral irritation may let loose a convulsion in those predisposed. True pathologic

lesions causing convulsions during childhood are meningitis, encephalitis, cortical hemorrhagic lesions, embolism and thrombosis. They may occur during the acute infectious diseases or as a complication of pericarditis. A predisposition to convulsions is very likely unnecessary with such gross lesions. The hemorrhage over the brain cortex resulting from difficult labor or from forceps injury is due to rupture of fine blood vessels in the pia mater (pial hemorrhage). General convulsions may also be toxic in origin, the convulsion ushering in one of the acute infectious diseases.

The so-called idiopathic convulsions of infancy occur in a child that shows no evidence of a brain lesion or of an acute infectious disease. There may be the history of an attack of acute indigestion preceding the attack, or the child may be teething, but these disturbances hardly justify the development of convulsions. Fever is usually slight or altogether wanting. The nutrition, however, is usually found to be below par, or the signs of rickets may be present. Furthermore, a careful examination of the child's nervous system will reveal a generally heightened irritability of the motor nerves and perhaps a latent tetany. Attacks of laryngismus stridulous may also be noted in the previous history of the case. The increased electrical irritability of the motor nerves, and the presence of Chvostek's sign and Trousseau's phenomenon reveal the latent tetany.

Epilepsy may begin in infancy and convulsions at this time of life may therefore indicate the onset of epilepsy. Such an occurrence of epilepsy is exceedingly rare. The majority of cases of epilepsy begin in later childhood or early adult life.

I shall confine my discussion mainly to the role played by the mineral salts in disturbances of the nervous system. Briefly stated we may say that the salts of the monovalent elements mainly potassium and sodium, exert a stimulating and exciting effect upon the protoplasm of the nerve cell, while the divalent elements, calcium and magnesium, exert a sedative, or inhibitory effect. The importance of sodium chloride for maintaining the heart beat illustrates one of the actions of this salt. A remarkable fact which has been discovered in experimental studies with the salts is that a solution containing a single salt may be toxic, while a combination of salts will prove to be non-toxic. Thus sodium chloride alone will de-

stroy certain forms of marine animals while the addition of potassium and calcium overcomes this toxic effect.

This fact explains why Ringer's solution, which contains sodium, potassium, and calcium will keep a frog's heart beating longer than normal salt solution. It has been stated that were it not for the calcium in our blood our muscles would be in a constant state of contraction.

The abnormal irritability of the cerebral cortex of an infant's brain therefore, in the absence of a pathologic lesion such as a pial hemorrhage or a meningitis, can very logically be attributed to some disturbance in the balance of the mineral salts in the organism. We are justified in accepting this view not only from the clinical observation of these children but also on the grounds of certain pathologic studies. A deficiency of calcium in the brains of these children has actually been demonstrated.

The primary cause of the disturbed calcium metabolism may be a deficiency of calcium in the food; even breast milk may be deficient in this element. More frequently, however, it is due to an increased excretion of calcium chiefly through the intestinal tract, resulting from improper feeding (*Milch-nährschaden*, as Czerny calls it). The frequent occurrence of convulsions in infants suffering with intestinal disorders and with rickets is thus made clear.

DISCUSSION.

DEAN PIERSON: There are a great many things about metabolism that we know very little about. First, let me tell you of some experiments along this same line that I conducted during the last few months, feeding white mice with milks of different dilutions. I found that whole milk was sufficient nourishment for white mice to enable them to gain considerably in body weight. When one-third water and two-thirds milk was used, the mice were merely able to hold their own, and could make no gain in weight. On half milk and half water, they steadily declined in weight, and eventually died. On one-third milk and two-thirds water, they died rapidly.

You have, in milk, a sufficient amount of nourishment; as shown by the fact that the mice that were receiving whole milk were capable of gaining in weight. When, however, the milk was diluted with water, they either did not eat enough

of it or its quality was not right. Anyhow, the body weight was not maintained.

That is a peculiar thing. It may be that the dilution of the salts had something to do with the results in these experiments. I was reading an article, some time ago, concerning some experiments conducted with the isolated heart of a frog; and in the last paragraph, it said that the laboratory assistant had made a mistake in making up the Ringer's solution, and put in only half the amount of calcium called for by the formulæ. It was shown that when placed in this imperfectly prepared Ringer's solution, the heart was actually improved, and beat longer on account of the fact that the solution contained less calcium than properly made Ringer's solution. Whether that is a fact or not, remains to be seen; but this result shows that the salts have a marked importance in connection with vital phenomena.

The experiments of several different investigators regarding the feeding of animals with insufficient fat are interesting. They fed young animals with skimmed milk, supplying the deficiency in fat with lard; and these animals did not thrive. If either butter or cod-liver oil was substituted for the lard, the animals lived and thrived. Some time ago, I happened casually to open an old book in the library; and I noticed an advertisement of a particular kind of cod-liver oil. The book was fifty years old. The advertisement spoke of the excellence of that particular brand of cod-liver oil, saying that the fish from which it came had been caught in a placid bay near a placid Italian town, and therefore had not been disturbed by ocean-going boats; and that for that reason the mental condition of these codfish was probably better than that of fish caught in other localities. This idea was, no doubt, commercially important fifty years ago; because it enabled the maker of the advertisement to increase his revenues. Even in 1914, however, some people have the same queer ideas; and probably some of the ideas that we have will look as foolish in the future as this one does to us at the present time. I am sure that the last word has not yet been said on metabolism, and probably not even the first word.

DR. D. M. LANDIS, Perkasié: I am anxious to know whether the gentleman that fed milk and water in various strength to mice took the same quantity of the strong milk as of the diluted. I suppose he will say that he put the liquid in a dish and let the mice take as much as they wanted of it. The question has been raised whether there was plenty of the good milk. Probably the animals took the milk as long as it

remained good; but the question is whether, after having stood a while diluted, it did not become deteriorated. Possibly the micro-organisms thus produced caused the death of the animals as much as did the insufficient nourishment.

DEAN PIERSON: I probably did not make myself clear on that point. I have four or five different cages of white mice; and the mice that had a chance to get the good milk had no chance to get the diluted milk, and *vice-versa*. It was merely a question whether the mice receiving the diluted milk would eat a sufficient quantity. There was no way of knowing how much they took. Dr. Raue's suggestion at the midnight conference is *a propos*. He suggested that I should have analyzed the milk of the mice, in order to see whether it corresponded in fat-content, salt-content, etc., to that which I was feeding them. I have not got that far yet.

DR. WESTON D. BAYLEY, Philadelphia: Dr. Raue's neurological foundations are so well established that he very seldom calls on me for moral support; but in this instance, I will say that I thoroughly agree with him that idiopathic epilepsy in infancy is exceedingly rare. Relative to the convulsions that occur in infancy, I would say—waiving, for the moment, any consideration of the organic cases—that I do not think we yet understand fully their real mechanism. We speak of reflex causes for convulsions, and undoubtedly we have many cases of convulsions in which we can trace the cause to reflex irritation; but there are cases in which similar irritation exists in infants without any convulsive phenomena, and these cases have to be taken into account in the etiological study. It may be observed that if one studies the cases of infants that have convulsions or are liable to convulsions of the non-organic type, one finds that they all appear to be, to some extent, at least, defective. I am rather of the opinion that there is a defective cortical nutrition in these cases, which is the primary cause, upon which the secondary cause, that of a reflex irritant, is superimposed, making a factor of sufficient intensity in the etiology to produce convulsions.

DR. RAUE, closing: I thank the gentlemen who have discussed the paper. I do not know that I should say much more on the subject; but the question of the metabolism of the mineral salts is becoming very important, and is not by any means limited to the phenomena that we find in the nervous system. I entirely agree with Dr. Bayley that there must be some nutritional disturbance in the brain cortex predisposing to these convulsions; but the only one that I can find is a deficiency in calcium. This has been a great help to me in

treatment. I have lately had a number of children subject to convulsions and the manifestations of tetany, who had been treated by means of bromides, chloral hydrate and various nerve sedatives and paralyzers, without any result; and I have been able, for a short time, to control the manifestations by regulating the diet and administering one of the calcium salts—sometimes calcarea phosphorica, sometimes glycerophosphate of lime, and sometimes magnesium phosphate. Many years ago, I felt myself, when I read the glowing reports on the results of magnesium phosphate in convulsions, that there must be an error; because I could not see the rationale. We know now that they do act in this way, and are beginning to understand the reason. So long as we have no scientific explanation for the results of a method of treatment, we are skeptical; but when we find that there is a scientific explanation, we take the method up again. That is the way with the use of magnesium phosphate in epilepsy.

A CONSIDERATION OF THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

BY

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CARCINOMA of the stomach, like cancer of the breast, must be considered a distinct surgical entity and positively comes within the realms of surgery. Just as soon as this is more definitely recognized, the sooner will the mortality of gastric carcinoma be reduced. Internists will hastily summon a surgeon when the smallest lump is found in the female breast, and yet impending cancer of the stomach is permitted to go unrecognized or perhaps not thought of until the case is beyond hope. Surgeons are constantly imploring the internist for a more early diagnosis, so that opening the abdomen for cancer of the stomach will not be a mere formality, viz., opening and again closing the abdomen.

It is true that on account of the various ways in which gastric carcinomata arise that the internist is not always to blame, but when, as so often found, the pre-cancerous history is so overwhelmingly evident and the early symptoms so suggestive.

then the surgeon has a right to insist upon having cases in time for operation.

I want to impress in my paper that the time has passed when even if a movable mass is found in the epigastrium, the case is not yet beyond surgical interference. A ridge or large sized tumor does not always preclude that surgery can no longer help.

Modern surgery has proven, and my own experience has corroborated the statement, that instead of permitting cases with epigastric tumors simply to be opened and again sutured, that some radical surgical operation should be considered. I have cases under observation who are living and enjoying good health, who had pylorotomies, excisions of growths, etc., done when a clinical history of gastric cancer was proven by surgeon and pathologist.

I trust, then, this paper will be an impetus to the general practitioner who usually sees these cases first, so that he will place his cases of early gastric cancer in competent surgical hands in time so the surgeon must not always say, "Too late."

In cancer of the stomach we are confronted with the development of the disease in several ways:

1. Where it arises from a pre-cancerous history, the patient giving a history of undisputed clinical gastric ulcer for perhaps months or years.

2. Where possibly, in a course of six weeks the patient develops and shows all of the typical symptoms of cancer. The time preceding this may have been absolutely free of any gastric discomfort.

3. Another class is where the patient shows a clinical evidence of gastric ulcer for a short time, but which suddenly and progressively takes a fatal downward course, and at autopsy or operation is found to be cancer.

Just what is the clinical symptom complex of gastric ulcer? Fredenwald, after an examination of over four hundred cases phrases the definition thus: "A form of gastric disorder occurring usually between the ages of ten and seventy years, characterized by periodic or continuous abdominal pain or discomfort, frequently bearing definite relation to food ingestion and often associated with epigastric or dorsal tenderness, vomiting, loss of blood, and with hyperacid gastric contents."

As primary cancer, Osler and McCrae give: "A form of gastric malfunction of a downwardly progressive nature, usu-

ally occurring in persons between the ages of forty and seventy years, who have been previously normal gastrically, or one with ulcer history, the **pre-cancerous**. The imperfect function is characterized by abdominal distress or pain, usually associated with **cachexia**, loss of blood, epigastric tumor, vomiting, and with gastric contents revealing motor defects, low free Hcl., the presence of organic acids and foreign micro-organisms."

As a pre-cancerous ulcer history, my own syndrome would be: A form of gastric disorder occurring usually between the ages of thirty and seventy years, characterized by the usual cardinal symptoms of gastric and pyloric ulcer, viz., pain one to three hours after meals, belching of gas, acid risings, periodicity, cycle and a possible defective gastric motility. In the beginning usually a hyperchlorhydria which is relieved by food or alkali. Vomiting soon ensues, which also gives relief of symptoms temporarily, and there is transitory occult blood in the gastric filtrate. As the ulcer progresses towards malignancy, we have a reduction of acids and ferments with loss of food relief and possible food aggravation. Absence of typical periodicity and cycle, an increase in the daily findings of occult blood in the gastric filtrate. A marked defective motility usually occurs with a possible gross error of motility and finally the beginning of a small mass at or near the pylorus.

It is thus quite clear that the first and most important aid to diagnosis is a well-taken and concise history. From the history alone can be made a tentative diagnosis, especially is this valuable where the clinical symptom complex points to chronic ulcer with obstruction (the pre-cancerous period).

Statistics show that cancer of the stomach occurs in about the following frequency:

Pylorus (in and around)	60%
Lesser curvature	20%
Larger curvature	10%
Cardia	10%

Surgical pathologists tell us that 51% of pyloric cancers are implanted on old ulcers.

The lesson to be learned from this is obvious. First, the clinician must be able to diagnose gastric ulcer, especially when it occurs in the region of the pylorus. With a clear understanding of the ulcer syndrome, disparagements from that

complex tending toward malignancy are not very difficult of interpretation.

Let me suggest seriatim the more common subjective clinical symptoms of early cancer.

Epigastric distress such as general discomfort, bloating, belching and weight.

Pain, burning, gnawing or sharp in character, not like pain of ulcer which comes one to four hours after a meal and is relieved by food or alkali. Cancer is not relieved by food, but is usually made worse, alkalies do not give the relief as in ulcer; and, lastly, there is not the definite periodicity of ulcer, or cycle.

Vomiting like ulcer gives temporary relief of pain but unlike ulcer is not of the characteristic acid taste. There may be a slight acidity due to organic acids, but it is quite different from the taste of a distinct hyperchlorhydria. Again, the vomitus often shows remnants of food eaten twenty-four to forty-eight hours prior.

Hemorrhage occurs, but not usually of the manifest type. Occult hemorrhage is common and characteristic; blood being noted day by day. Hemorrhage, however, depends on type. It is most common in adeno-carcinoma and the medullary type.

Anorexia exists especially for meat and protein foods. I have found eggs to be especially distasteful to many of my early cases. Thirst is very prominent early.

Oedema. An initial malleolar oedema is quite common. This oedema I consider a very important symptom and have seen cases show this during the pre-cancerous period to be followed later by other distinct symptoms.

Emaciation is characteristic of early cancer. Often this is one of the earliest symptoms and in excluding other pathological conditions, leads the clinician to the alimentary canal, where gastric analysis, etc., points a finger of suspicion to the actual cause.

Weakness. Often an early and characteristic development, due probably to the absorption of poisons from early carcinosis.

Pernicious Anemia. It has been my good fortune to come in contact with many cases of this disease and in my early days will confess I was more than once misled by the similarity of symptoms of this disease and early or late gastric cancer. Your patient has an anemic look which is similar to cachexia. The gastric symptoms are similar and unless you are careful

and make a thorough blood examination, cases of pernicious anemia will often be treated as gastric cancer. My experience has been that the gastric findings in pernicious anemia are similar, such as free Hcl content low, pepsin and rennet deficient, but the cardinal points of differentiation are that there is no interference with gastric motility, and that that is an absence of occult blood and the fact that the usual cancer tests are always found negative.

Objectively we have more potent means of diagnosis. In my mind the one great important and most valuable symptom in the diagnosis of early gastric cancer is *interference with motility*. A stomach is only of value so long as its motility is good. You may have complete absence of free Hcl, pepsin, rennet, etc., but if the motility is good there may be few if any symptoms. Many people go through life with altered or perverted gastric chemistry, who have no symptoms, discomfort or distress. Take, however, a patient with or without a pre-cancerous history, who by motor tests shows defective motility, be it only mild, you have a tangible foundation upon which to build a diagnosis. These motor tests can be carried out by test meals, where, after giving a suitable meal the stomach is syphoned six, seven, eight or ten or twelve hours afterwards. Briefly, a normal stomach will empty itself in six hours, so if remnants of food are found after that, hour by hour the degree of defective motility is more pronounced. Given then, the history with chemical and objective findings, plus an error of motility, you can, if on the alert, diagnose many surgical conditions early enough for surgery to cure.

A combination of defective motility (or obstruction) in conjunction with tumor is pathognomic of cancer of the stomach in 95% of the cases.

Here, let me digress enough to plead for a most important part in diagnosis. I have no hesitation in saying that to-day vast numbers of people are being treated for "gastritis," "catarrh of the stomach," "dyspepsia," "liver trouble," etc., who are victims of a gross error of motility due to pyloric stenosis. This pyloric obstruction in many instances is due to an old chronic ulcer in a pre-cancerous period. Here, if you make the diagnosis you not only pave the way for complete cure of the ulcer, but may prevent cancer where the ground is extremely fertile. Let me cite briefly a simple test for pyloric obstruction.

Give a meal plus twenty-five small seedless currants. In twelve hours wash the stomach and if any currants are found there is undisputed evidence of a gross error of motility. It is then wise to repeat the test several times, on account of an acute ulcer at times producing pylorospasm with retention of currants.

Gastric Chemistry. This is extremely valuable, but must be considered relatively. It must not be depended upon alone and is valuable in conjunction with other factors. At times, however, it is the real clue. Alteration of Hcl. in amount is helpful. Formerly the complete absence of free Hcl. was considered very important. It is established, however, that 44% proven and advanced cases of cancer ventriculi had free Hcl., but when present its average was between 16 and 20. In ulcer it is usually between 50 and 60. Great import must be placed on a case where in ulcer acid has been high, and gradually or suddenly falls lower and lower. This phenomenon plus other cancer symptoms is of the highest value.

Occult Blood is present in about 75% of cases. When found is usually present test after test in contra-distinction to ulcer in which it is transitory.

Lactic Acid. In cases where malignancy is suspected, the presence of appreciable amounts of lactic acid is more valuable than the absence of free Hcl. Lactic acid in amount is never present in a normal stomach. True it generates when such foods as meats, fish and milk foods are eaten, but the quantity is small. Here I follow Boas who tests for lactic acid after being sure that no food is taken to cause the acid. Knorr's oatmeal is free of lactic acid forming qualities and should be used as a test meal.

If then, after a positive reaction in a suspected case, lactic acid is found in amount, it is strongly suggestive of cancer.

Tissue Fragments. I have records of ten cases in which physicians had cases where the only symptoms were frequent vomiting, in which we were able to find tiny particles of tissue. These, upon microscopic section, proved to be carcinomata.

Boas Oppler Bacilli are found especially when obstruction is pronounced. On account of carcinoma having as one of its initial changes, obstruction, it is not unusual to find these organisms early, even before a tumor is palpable. In a series of eighty early cases, I have found the organism 60 times or 75%.

Cancer Tests. Solomon's, Oppenheimer and Glycyltrypto-

phan have their relative value. I want to speak particularly of the latest and in my mind the most valuable test at our command, viz., *Wolf-Junghan's* reaction for quantitative dissolved albumin. The basis for this procedure is that normally there exists in healthy stomachs considerable dissolved albumin, the result of digested enzymes, the proportion of which is about 10 to 50 units. In stomachs affected by malignant disease, the proportion is much higher, 10 to 400. This test in conjunction with other corroborative symptoms is so valuable that I want to give its technique.

Take six clear test tubes holding about 20 cc. and number 1 to 6. Into these put 1 cc., 0.5 cc., 0.25 cc., 0.1 cc., 0.05 cc., 0.025 cc. of filtered gastric juice. Next add aqua dest to make the volume 10 cc. This gives from tubes 1 to 6 dilutions of gastric juice varying from 1:10 to 1:400 (viz., 1:10—1:120—1:40—1:100—1:200 and 1:400). These figures may be termed "units" of precipitate albumin. Next invert the tubes several times to thoroughly mix. Now add 1 cc. of a reagent to precipitate the albumin in the solution, which is floated upon the contents in each tube. Wolff's solution is used mostly and composed of—

Phosphotungstic acid	3.0 cc.
Concen. Hcl.	10. cc.
Alcohol 96%	200. cc.
Aqua dest. Q. S.	2000. cc.

Keep in a cool place in a glass stoppered bottle.

Interpretation of Reaction.

If dissolved albumin is present in any of the test tubes, there will be found at the junction of the gastric extract and Wolff re-agent a white pearly ring, similar to that developed in a nitric acid contact test for albumin in urine.

If the ring occurs in tubes 1, 2, 3 with units 10-50 and none in 4, 5, 6 the reaction is negative. If in 1, 2, 3, 4 it is doubtful. If in 1 to 6 inclusive the test is positive. This test in my private practice has been confirmed in 78% of cases, with carcinoma early and late.

In conjunction with other symptoms, a positive re-action lends weighty support to a suspicious case. Cancer involving the pylorus and curvatures gives the highest positive results, although the cardia may give the re-action but in much lesser degree.

Blood in the gastric juice may confuse one in determining a positive re-action. In twenty cases of pyloric obstruction with no cancer symptoms, the result was positive eighteen times. Operation showed these cases to be in an early stage of malignancy.

Pus. A normal stomach never contains pus. When found its importance is very suggestive. Early cancer will show the cells massed most often as if from a slough. Centrifuging gastric contents gives it most easily.

Physiological Leucocytosis. Normally, after the ingestion of a hearty meal there is a marked leucocytosis. In early malignancy this is often absent. I have been surprised as to the frequency of this phenomenon.

During the past five years I have observed the physiological leucocytosis in five hundred individuals and have found that ranging between one half hour to two hours after a hearty meal there is a decided increase in the number of leucocytes. The scale runs from seven to fourteen thousand. I have also observed that in early gastric cancer this condition is markedly interfered with. My conclusions are that in early gastric carcinoma the number of leucocytes remain stationary.

Tumor. Finding a mass or ridge in the epigastrium is very suggestive of cancer. It must be remembered, however, that a movable mass in the region of the pylorus is not necessarily a bar to operation.

Metastases. I mention these in passing mainly for one reason. Often it becomes necessary to say whether a case with obstruction, tumor, etc., is operable. In general it is wise not to interfere surgically where left supra clavicular, rectal or vaginal lymph involvement exists.

Lastly, the *X-Ray*. Here, gentlemen, we have if carefully interpreted a means for diagnosis that is the greatest corroboration of clinical and laboratory findings. Without exception, I believe the internist and Roentgenologist by team work can unravel many mysteries of the upper abdomen in time to permit the surgeon a still higher percentage of cures.

In the X-ray you have a means of checking the clinical findings which is undisputed and gives you evidence ne plus ultra.

Dr. Barker has consented to show you pictures of gastric ulcer running through the transitional stage into early malignancy. Some of these pictures are of my own private collec-

tion, the patients having been operated and are living triumphs of thorough, careful clinical findings and Roentgenology.

In conclusion, let me say that if I have given you the impression that the diagnosis of early gastric cancer is a sinecure, let me correct that at once.

I do insist, however, that a pre-cancerous history, viz., one due to pyloric obstruction or ulcer which has existed for years is an easy matter and should be uppermost in every internist's mind.

2. That you have at your command to-day a test, namely, Wolff-Junghans reaction which is as ideal as a cancer test can be at present.

3. That the surgeon has a right to demand an early diagnosis in pyloric ulcer with obstruction before this goes through the transitional stage to cancer.

4. That the finding of a tumor or ridge in the epigastrium is not always positive that surgical interference is not indicated.

5. That rectal and supra clavicular metastases are sure signs that the case is inoperable.

Lastly, that the combination of other clinical findings in conjunction with the X-ray diagnosis in the hands of a competent X-rayist is at present, the only, and I might say ideal, way to make a diagnosis.

THE IMPORTANCE OF THE ROENTGEN RAY IN THE EARLY DIAGNOSIS OF MALIGNANCY.

BY

WALTER C. BARKER, M.D.

Röntgenologist to the Women's Homœopathic Hospital of Philadelphia.

THE roentgenographic examination of the stomach is the ideal method by which malignancy may be diagnosed early. The accuracy of this method will not compare with that of the microscopic examination, but the results are just as reliable as those of the exploratory incision. The examination will show adhesions that are non-malignant, adhesions that are due to ulcer, which is a frequent site for malignancy, and new growths both benign and malignant.

To be of value in an early diagnosis, the roentgenray must



NO. 2. GASTRIC CARCINOMA



NO. 1. GASTRIC PYLORIC ULCER.

be used before the appearance of the classical symptoms of carcinoma of the stomach. The symptoms that call for a roentgenographic examination are characterized by their vagueness, such as failing appetite, with some loss of weight, and a general distress referred to the gastro-intestinal tract and lasting for a few weeks followed by an improvement with gain in weight. Symptoms of this kind recurring at intervals of several months give a history that suggests organic changes.

All patients with stomach trouble who fail to improve under treatment should be subjected to a thorough examination. A history of gastric ulcer with continued symptoms of digestive disturbances is a very suggestive of beginning malignancy. Many ulcers heal with very slight scar formation, and cause no future trouble, but those that form many adhesions (scirrhus type) may result in the transitional malignant tumor.

Most cases of chronic gastro-intestinal disturbances have, as a causative factor, an organic lesion. This lesion may not be in the stomach itself and hence the stomach is found to be normal. In such cases, a general roentgenographic examination is indicated.

To be of value, the examination must be made by the serial method (a), that is, by a large number of plates exposed at short intervals. The report will contain the reading of the plates, the diagnosis based upon the findings, and suggestions, when an operation is indicated.

In general, operation is indicated from a roentgenographic examination when there is obstruction of the pylorus, when there is stasis of the stomach contents, even though there may be no obstruction, scirrhus ulcer at or near the pylorus, and a new growth near the pylorus.

Plate No. 1 shows a thickening near the pyloric sphincter on the lesser curvature side. At operation a scar due to ulcer was found but not excised.

Plate No. 2, was made of a stomach having a very extensive ulceration on the lesser curvature side. This indicates the type of cases that must be watched for the first sign of malignancy.

Plate No. 3, represents the transitional type of cancer. There is a thinning out of the stomach wall extending from the adhesions due to ulcer.

Plate No. 4, shows the new growth. This is an annular



NO. 4. SCIRRHUS ULCER



NO. 3. TRANSITIONAL PYLORIC ULCER

carcinoma at the pyloric sphincter. It holds the sphincter open and does not cause obstruction. This stomach empties rapidly. Usually carcinoma at the pylorus causes obstruction.

To be of value, the examination for carcinoma of the stomach must be made early. To determine the cause of their trouble, all cases with chronic gastro-intestinal symptoms should have a roentgenographic examination and in this way malignancy, if present, will be discovered at a time when the removal of the growth may be successfully made.

NOTE.—Serial Roentgenography was devised and perfected by Dr. L. G. Cole.

THE OPTOMETRISTS.

BY

D. P. MADDUX, M.D.

Member of the Bureau of Medical Education and Licensure.

THERE are no less than three Bills that have been presented for the regulation of the practice of Optometry to the present Legislature of this State.

Senate Bill, No. 141 and House Bill, No. 251 were both presented on February 8th by the Optometrists themselves. These Bills are identically worded and propose to create "a Bureau of Optometrical Education, Examination and Licensure of the Department of Public Instruction." The proposed "Bureau" would be composed of six Optometrists and the Superintendent of the Department of Public Instruction: no medical man or oculist being considered eligible for the position; the appointments being made by the Governor from the list of the members of the Optical Society of the State of Pennsylvania. Under these Bills the examinations would be of two types. One type of examination is for those who have practiced Optometry for over two years: this is called the "Limited Examination" and is confined to the following subjects:

- "(a) The limitations of the sphere of optometry."
- "(b) The necessary scientific instruments used."
- "(c) The form and power of lenses used."
- "(d) A correct method of measuring presbyopia, hypermetropia, myopia and astigmatism."

“(e) The writing of formulas or prescriptions for the adaptation of lenses in aid of vision.”

Those who cannot qualify by years of practice must take the “Standard Examination.”

Candidates for this examination “must have a preliminary education equivalent to two years of the course of a high school whose standard is approved by the Department of Public Instruction”—“must be a graduate of a school of Optometry, which maintains a course of Optometry of not less than two years, and *afterwards* studied Optometry for at least one year in a licensed Optometrist’s office.” The “standard” examination consists of “tests in practical, theoretical and physiological optics, in theoretical and practical Optometry and in the anatomy and physiology of the eye, and in pathology as applied to Optometry.”

The Optometrists in their Bills ask for a much wider range of authority than is assumed by the other allied branches of Medicine. The Dentists, the Pharmacutists, the Veterinarians, the Osteopaths are all licensed to practice by examining “Boards.” The Optometrists ask to operate as a “Bureau” and to assume functions far wider than those of an examining “Board.”

This “Bureau of Optometrical Education, Examination and Licensure” would have the power to standardize the colleges of Optometry: to determine which colleges should be recognized and which rejected, without any power having review or revision of their acts: this too, without the Bills defining in any way what the standards were to be.

House Bill No. 205 represents the three medical “Schools” and the Society for the Conservation of Vision. This Bill refers the licensing of the Optometrists to the administration of the Bureau of Medical Education and Licensure; but specifically states in Section three that “the examination shall be conducted by a board of examiners consisting of practicing Optometrists.”

The examinations for licensure under this Bill might also be classified as “Limited” and “Standard.” To quote from Section 3, “Every person who is actually engaged in the practice of Optometry in the State of Pennsylvania at the time of the passage of this Act, shall within six months thereafter file an affidavit in proof thereof with the Bureau of Medical Education and Licensure of the Department of Public Instruc-

tion and shall satisfy the Bureau of their competency by an examination in practical and theoretical optics, conducted by a board of examiners consisting of practicing optometrists, who have been engaged in optometry for at least five years, and who shall be appointed by the Bureau of Medical Examination and Licensure."

For those who later enter into the practice of optometry, an educational standard of a two years high school course is required: the technical training must be "not less than two years of optometry work in the office of a licensed optometrist and not less than two years' instruction in an approved optical school or college." The examination for this class "shall be confined to such knowledge as is essential to the practice of optometry, and shall include the general principles of anatomy and physiology, and the anatomy and physiology of the eye: all branches of optics as applied to optometry, theoretically applied optics, and diagnosis and symptomatology as applied to the eye." Ample provision is made in the Bills of both for the registration of license, and the prevention of migratory optometrists. Provision is made in each for the revocation of license for cause. The penalties for the violation of the Act are much more drastic in the Bill offered by the Optometrists than in the Bill presented by the Society for the Conservation of Vision.

A considerable number of the Optometrists refer to themselves and their associates as "Doctor;" the statement has been made by some of them upon the stand that the New York Law conferred the right of the use of the title D.O. (Doctor of Optometry.) This must be an error, for in the official roster of the "Courses in Practical Optics" associated with Columbia University, no prefix or suffix is attached to the names of any but medical men, and those who are not medical men are either referred to as "Professor" or "Mister."

While Section 11 of their Bill states the negative side, that, "Nothing in this Act shall be construed as conferring on the holder of any certificate of licensure the title of Doctor, Oculist, Ophthalmologist," etc, there is nothing in the Act restraining the use of the title.

Section 12, of the Bill introduced by the Society for the conservation of Vision states, "Any person holding a license under this Act who shall attach to his name, or use the title M.D., surgeon, doctor, physical, eye specialist, oculist, oph-

thalmologist, doctor of ophthalmology, doctor of optometry, doctor of optics, or any title containing the word doctor, or the abbreviation Dr., or any word or abbreviation that will convey the impression that he is engaged in the treatment of diseases or injuries of the human eyes, or make use of drugs, medicine or surgery in the practice of optometry, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not more than two hundred dollars."

Much of the phrasing of the Bill drawn by the Optometrists is similar to the Act regulating Optometry in the State of New York, which became a Law February 17th, 1909; but in New York the Optometrists have merely a board of examiners, their rules and regulations are subject to the approval of the Regents; while in Pennsylvania they are asking for a separate "Bureau" with no supervision.

It was the clear intent of those who framed the present Medical Act, that the Bureau of Medical Education and Licensure, as stated in Section 6, should be the body to examine and license "any person pretending to a knowledge of any branch or branches of medicine." Section 1 of the same Act states that those who professionally "diagnose diseases" must receive a certificate of licensure from this Bureau.

The injunction restraining the Bureau of Medical Education and Licensure from administering the Act in reference to the Optometrists was based upon their sworn statements that Optometrists did not diagnose diseases of the eye. They may have told the truth. This Bureau assumes the postulate, that no one who was incapable of recognizing a diseased eye, that should be treated other than by lenses, was a very safe person to trust with the lense proposition alone. The ability of any one to safely treat the sick depends almost as much upon his wisdom of knowing what not to do as it does upon his technical ability to do. There may be the utmost divergence of opinion as to how to treat a given condition, but there can be none as to the necessity of knowing what that condition is.

The fact that representative Optometrists stated upon oath that the diagnosis of eye conditions was a thing apart from their trade, makes the Bureau feel that the calling should be raised to a higher level, and only those engage in it who pay some consideration to the recognition of those diseased eyes that require more than mere lense adjustment.

Two singularly conflicting statements have been made by representative Optometrists. A member of the Bureau of Medical Education and Licensure was told by one of them that that Bureau was objected to because it was feared it would be too lax and let in too many that should be kept out. The same group have since publicly stated that they objected to the Bureau administering the Law, because it would be too drastic and try and eliminate the Optometrists as a class. Neither statement is correct. The Bureau recognizes the right to practice optometry by adequately trained persons, other than oculists.

There is no desire or intent on its part to eliminate any but the unsafe. It is the very well defined desire and intent of the Bureau that no one shall receive a license in optometry until he has given evidence of competency.

Ultior motive cannot be assigned to the Bureau in its desire to administer the Act, for it means a vast increase of work without any increase of compensation; but this is something that real Doctors get accustomed to.

PULMONARY TUBERCULOSIS IN CHILDHOOD.—It used to be taught that up to puberty or thereabouts the average child did not suffer from the adolescent or adult types of pulmonary phthisis. We were to fear chiefly tuberculosis of the bronchial glands, acute miliary tubercle, etc., and especially the meningeal location. To-day Rach (*Munch. Med. Woch.*, March 24, 1914), an assistant of von Pirquet, shows that such teachings are largely antiquated. Children and even nurslings present lesions which do not differ essentially from those of much older subjects. We are now able to isolate six types of pulmonary tuberculosis in childhood: I. Gihon's primary focus, which may appear anywhere in the lung. II. The intumescent tuberculosis of the bronchial glands. III. The intrapulmonal hilus tuberculosis. IV. Miliary tuberculosis. V. Nursling's phthisis, and VI., apex tuberculosis. This classification is largely the result of studying radiographs. Nursling's phthisis includes cavitary lesions and caseous pneumonia. Apex tuberculosis may begin as early as the seventh year.—*Medical Record*.

EDITORIAL

THE NATIONAL ANTI-NARCOTIC LAW.

IT is important that every physician should familiarize himself with the new Harrison Antinarcotic Law which goes into effect throughout the entire United States on March 1st, 1915. A fine of two thousand dollars or five years' imprisonment or both is the penalty likely to be incurred by any physician who, knowingly or unknowingly, violates the provisions of this act.

The Law provides that every physician who desires to sell, give away, or have in his possession opium or cocoa leaves, or any compound, manufacture, salt, derivation or preparation thereof, must register his name and address with the Collector of Internal Revenue of his district and pay the annual tax of one dollar. A physician thus registered is permitted to prescribe any of these drugs provided the prescription is signed and dated by him and contains the name of the person for whom the drug is prescribed. If the physician desires to dispense or administer to a patient any or both of the above mentioned drugs, he must keep a written report of the amount of such drugs used, the time it was given and the name of the patient to whom it was given. If the physician desires to purchase opium, cocaine or any similar narcotic, he must fill out a special form which is supplied by the Collector of Internal Revenue at the expense of one dollar per hundred. Duplicate copy of this order must be kept by the purchaser and by the seller for a period of two years and; all records concerning the purchase and use of these drugs must be shown on demand of any agent or employee of the government.

By March 1st, no doubt, most physicians will have recovered from the brain fag induced by figuring out their income tax report so that they will be able to direct their entire attention to registering and filling out reports in regard to narcotic drugs. By the time the proper legal requirements are fully complied with, it is probable that our resourceful law makers will have devised some new method whereby the busy doctor may be able to while away his idle moments. G. H. W.

THE REGULATION OF OPTOMETRY IN PENNSYLVANIA.

IN 1913, the scope of the **work** of the Bureau of Medical Education and **Licensure** was broadened so that it not merely was the administrative board of medical practitioners, but it included drugless therapy (chiropractic, neuropathy, spondylotherapy, in fact of all but osteopathy), chiropody and midwifery. The administration of these allied branches of medicine has been so fair and successful that any different method employed in the regulation of optometry should not be considered.

In attempting to regulate optometry, this Board was haled into a Philadelphia Court by our optometrical friends and an injunction issued by two local judges restraining such examinations. This entailed the necessity of further legislation: two bills have been introduced into the State Legislature on this subject, the essential difference between them being as to the administration of such regulation—one placing this in the hands of the Bureau of Medical Education and Licensure and the other, in the hands of the optometrists themselves,—and this is the crux of the matter.

The first Bill (No. 205 in the House Calendar) provides for the examination of optometrists at present actually engaged in the practice of optometry and for the regulation by a course of study followed by examination, in the future (six months after the passage of the bill) of those desiring to practice optometry. This bill is drawn to include every demand for the protection of optometrists, as well as for the protection of the public. The actual examinations are to be made by an advisory board composed of optometrists. The optometrists admit the necessity of regulation but demand the control of such regulation themselves. The Board is willing to include by amendment into this bill, any features which optometrists can reasonably demonstrate are desirable.

The creation of an independent board of optometrists is distinctly inadvisable. The Efficiency Committee appointed by the last Legislature to investigate the subject of administration, recommend that all such boards be consolidated into one. In professional and semi-professional matters, the State has practically committed itself to the policy that no more independent boards shall be created. Further, no body of men should be authorized to administer a law in which they have

a direct financial interest. This bill will come up for action shortly; it has been referred to the House Committee on Public Health and Sanitation. Charges of favoritism and self interest have been made on both sides but these must be disregarded.

Do not belittle the honest work of many examining opticians, or optometrists as they are now called. Unfortunately, there are too many general practitioners prescribing glasses without any further preparation than the necessarily meagre ground work obtainable in a crowded medical curriculum.

There is no denial of the rights of the optometrists; they must be dealt with fairly; their profession is one of ancient standing and, until a comparatively recent date, a large part of that which is done by optometrists was exclusively within their province and was not covered in practice by the efforts of the physician or surgeon.

Notwithstanding the decision of the judges in a Philadelphia court last October to the contrary, optometry and ophthalmology overlap each other to such an extent that optometry must be called a branch of medicine—semi-professional if you wish.

We are interested in this matter individually and as a school. It is not sufficient that we sit back and allow other schools and societies to protect the general interest of the profession and the public in educational and legislative affairs. As homœopaths, we should be in the fore in all constructive work, and it behooves us to take some definite action in this matter in our State and local societies. Further, it would be of benefit if the individual physician would give a few minutes of his busy time to writing to his local representative in the House of Representatives in favor of this bill (No. 205).

It seems highly desirable that all professional and semi-professional occupations be under the regulation and administration of a central board, as is the case in New York under the Board of Regents. Pennsylvania will eventually adopt such procedure. Such a Board will then control osteopathy, pharmacy, and dentistry as well as medicine and surgery and their allied branches, and a bill to this effect has already been introduced into the State Legislature. Centralization is the keynote of efficiency!

W. M. HILLEGAS.

GLEANINGS

TWO ABORTIVE CURES OF SYPHILIS IN THE SAME SUBJECT.—Hoffman reports what is doubtless a unique case although one which in theory might readily be duplicated. A man 39 years of age contracted a chancre for which his attending physician made an injection of salicylate of mercury. Salvarsan was refused and patient next consulted the author who found a typical initial lesion, spirochetes present, enlarged proper lymph-nodes, no secondary symptoms, Wassermann reaction negative. An inunction cure was at once begun, with weekly injections of old salvarsan. No secondary symptoms and Wassermann reaction negative during an observation period of about six months. At this period a "provocative" injection of salvarsan gave a negative result. During this period patient had received in all 0.82 gram old salvarsan and 4 grams blue ointment in 24 inunctions. Two years and two months later patient reappeared with a new primary lesion of the penis at some distance from the site of the first. Spirochetes were present in large numbers. The proper lymphnodes were enlarged. The lesion was small and the incubation period was over six weeks. The Wassermann reaction was at first negative. The lesion was excised, and was found to be histologically a chancre. The combined treatment was at once resumed. No secondary symptoms appeared but at the end of the first week the Wassermann reaction became positive, for one test only. The treatment comprised 42 inunctions and the salvarsan injections. Eight months after the second chancre was acquired the Wassermann reaction again became positive for a brief interval but there was no further variation even when the provocative injection was given. The Wassermann reaction was also negative in the spinal fluid.—*Munchener Med. Woch.*

PELLAGRA, DIAGNOSIS OF.—The diagnosis of pellagra is not infrequently somewhat difficult, the chief reason being its peculiarity as regards seasonal variations, the irregularity of its symptoms, and its long-drawn-out course for the development of the characteristic signs. The skin, nervous, and gastro-intestinal symptoms do not usually develop at the same time, and dependence on the skin symptoms, which are the least important, is likely to lead to mistakes. One should learn to recognize others that will help its recognition between the attacks. Of these diarrhoea stands first, occurring as a spring or summer attack, and in some cases persisting through the year. It should be regarded with suspicion in pellagrous areas. It may, however, be absent, and there are other gastro-enteric symptoms that have a significance, since they commonly persist throughout the colder months and are often the first to appear. These are loss of appetite, "dyspepsia," pyrosis, and sore mouth. Nausea is present in most cases, and pain in the stomach and bowel is practically constant. Pyrosis is the most frequent, and the stomatitis occurring in the spring or summer is commonly present

at some time or other. The tongue affords much information, even in the less active stages of the disease. It may at first present only the appearance of a normally coated tongue, but very often careful observation will show enlarged papillæ on the tip or anterior portion. An enlarged tongue is not uncommon. The characteristic feature of the pellagrous tongue, however, is the shedding of the epithelium, making it look cleaner, smoother, and very red. The redness varies in degree and sometimes one sees a pale tongue. Tremor of the tongue when extended is common, and is not confined to the attack. The fissured tongue is an aid to the diagnosis and is most marked in cases of long continuance, though it is not peculiar to pellagra. One should, however, be on the lookout for it and its association with enlargement; tremulousness and partial or complete epithelium denudation are enough to justify one in suspecting pellagra.—*T. Frazer (Journal of the American Medical Association, April 11, 1914.)*

ARTHRITIS DEFORMANS, ETIOLOGY OF.—The chief objection to the infection theory has been the lack of isolation of organisms from the tissues of joints in so many cases. It occurred to the author that it would be well to look for organisms in the lymph-glands draining the involved joints, and he reports the results he has obtained. Germs were isolated from glands in 35 out of 38 cases of the disease, its duration ranging from two to seventeen years. Streptococci were obtained in 14 cases; a peculiar streptococcus-like organism at first completely or partially anaerobic in 9 cases; *Bacillus Welchii* in 9 cases; staphylococci in 3; *B. mucosus* in 1 case, and the gonococcus in 1. In a number of glands several organisms were found at the same time. In no instance were the streptococci hemolytic for human blood. They resembled on isolation the usual streptococcus viridans more than hemolytic streptococci. There is often a marked difference between the type of organisms found in foci of infection, such as the tonsils, and of those found in the glands (or joints). Positive results were obtained from glands measuring only 5 mm. The number of colonies ranged from 1 to 2,000. The virulence was slight. When first isolated, the streptococci showed marked affinity for joints and muscles, sometimes causing lesions closely paralleling the condition in the patient from whom the strain was isolated. Sometimes the same organism was isolated from widely separated glands, from gland and muscle, or joint fluid or joint capsule. The size of the gland is apparently often proportional to the degree of joint disease. The patient is often sensitive to injection of autogenous vaccine in the glands, and marked improvement may follow such injection. These facts seem to leave little doubt as to the infectious cause of the disease, but the full significance of the *B. Welchii* in both glands and joints is not yet clear.—*E. C. Rosenow (Journal of the American Medical Association, April 11, 1914.)*

MIDDLE EAR, DANGER SIGNALS IN SUPPURATION OF.—The danger signals indicating operative interference in acute suppuration are: (1) Temperature over 101 degrees F. (2) Non-subsidence of pain and tenderness and temperature after the performance of paracentesis or natural rupture of the tympanic membrane. (3) Facial paralysis. (4) Vomiting, giddiness and tenderness. (5) Early optic neuritis.

The danger signals in chronic suppuration of the middle ear are: (1)

Diminution of discharge with attacks of pain; (2) non-diminution of discharge after careful treatment; (3) fetor of discharge; (4) headache; (5) deep tenderness over the mastoid; (6) deep pain in the ear; (7) sudden increase in deafness; (8) diminution of bone-conduction; (9) vertigo and tinnitus; (10) early optic neuritis.

Occasionally in chronic suppuration one finds an early optic neuritis or slight vascular engorgement without necessarily severe intracranial disease being present. It is probably due to serous meningitis, and is an indication for immediate interference.

Such signs as high temperature, rigors, and severe vomiting, which are often given as indications for performing the mastoid operation, are not danger signals, because when they appear one has passed the signals and is actually in collision with a serious disease. When they have occurred serious measures have to be undertaken, such as opening the lateral sinus, and draining cerebral abscesses or the meninges.—*H. A. Kisch (Clinical Journal, May 20, 1914).*

TWO CASES OF SPRUE TREATED BY MOUTH STREPTOCOCCAL VACCINES AND EMETINE HYDROCHLORIDE HYPODERMICALLY.—Rogers, in the *Lancet* of June 6, 1914, makes a report on this treatment of sprue and says that although it is too early to draw final conclusions from the above two cases, yet in view of the very unsatisfactory results of other forms of treatment in Calcutta (including that by santonin), the rapid and great improvement in two successive severe and very chronic cases is not a little remarkable. In the first case the improvement certainly commenced as soon as the emetine injections were begun, and before the mouth streptococcal vaccine was administered. Nevertheless, Rogers is inclined to attribute much of the ultimate success to the vaccine. In the second case a relapse occurred after improvement had followed the emetine injections, and it was not until the mouth condition had been improved by two doses of the streptococcal vaccine that rapid and continued improvement of the stools set in. Rogers thinks the milk diet was also of undoubted service in that case, although it was not found to be necessary with the first patient. He does not look on emetine as in any way a specific in sprue, such as it undoubtedly is in amebic dysentery and hepatitis, but he is inclined to regard it of some value in certain cases of the disease. We should bear in mind that "sprue" is a purely clinical term, and there may be more than one causative agent, just as in the case of "dysentery."

The success attending the use of vaccine made from the streptococci which were found present in practically pure culture in the mouth lesions is very significant, and opens up the interesting and suggestive question as to whether this class of organism may not be the cause of the disease, at least in some cases. The rapidity with which the disappearance of mouth ulcers under the influence of the vaccine was in the second case followed by cessation of the diarrhea certainly suggests a causal relationship between the organism and the disease, and affords some hope of the new treatment proving to be of a specific nature and thus an important advance in dealing with this intractable and distressing disease. Even in cases in which no mouth lesions are present there may still be a streptococcal infection of the digestive tract, and possible cultures may be obtainable from the stools

which might prove of service in the form of a vaccine. At any rate, it appears to be advisable to put these two cases on record without delay, if only to stimulate research on the lines he has indicated.—*Therapeutic Gazette*, October, 1914.

RESULTS OF THE OPERATIVE TREATMENT OF PLEURAL EMPYEMA IN CHILDREN.—Werner (*Deutsche Zeitschrift für Chirurgie*, Bd. 124, Heft. 1-4) states that in the Children's Hospital in Riga from 1900 to 1911 inclusive there were treated 178 cases of pleural empyema in children. This does not include the cases of tubercular empyema because these are to be considered from a different therapeutic and prognostic point of view. Of the 178 cases, 87 were on the right side, 87 on the left side, and 4 bilateral. The mortality was 20 in the right-sided cases, 15 in the left-sided, and 4 in the bilateral cases. As regards sex, 100 cases were boys and 78 girls. As to causation, 39 followed scarlet fever with 15 deaths, 6 measles with 2 deaths, 1 whooping-cough, 71 pneumonia with 15 deaths; in 61 cases with 7 deaths the cause was not determined. These figures show, as has been taught by Lenhartz and others, that the prognosis is best in the so-called idiopathic cases. Bacteriological investigation showed in 133 cases studied that the causative agent in 58 cases was the pneumococcus, in 35 streptococci, in 13 staphylococci, in one the influenza bacillus, and in 26 mixed infection. The method of treatment consisted in the majority of cases in the resection of a rib with drainage by means of a long rubber tube the lower end of which was immersed in a vessel of water. Later on a practice was made of resecting two ribs. A comparison of the two methods was favorable to the resection of a single rib.—*Therapeutic Gazette*, October, 1914.

RECTAL DISEASES IN CHILDREN.—Mummery (*The Proctologist*, March, 1914) notes that rectal diseases are not common in children. The one usually encountered is prolapse; the next fistula. Polypi, piles, congenital malformation, tubercular and other forms of ulceration are rare.

As to the examination, the anus of an infant six months old will easily admit the first fingers, if of an average size, without any fear of causing damage, provided reasonable care is taken to avoid roughness, it being remembered that the child's tissues are naturally delicate and tear much more easily than the adult's.

Moreover, the rectal examination is extremely valuable in examining for abdominal conditions in infants. It is possible thus by bimanual touch to investigate the condition of the whole of the lower part of the abdominal cavity and to feel well into the flanks. This method of examination is useful in the diagnosis of such conditions as ovarian cyst, of which Carpenter has recorded no less than 25 in children under twelve years of age. In infants it is often possible to feel the pelvis of the kidney.

After a discussion of congenital malformations of the rectum and anus and an effort to clarify the obscure embryology of this condition, the author advises that when there is no drainage from the bowel and the obstruction is due to something more than a mere septum between the anus and rectum, an incision should be made over the base of the scrotum and the tip of the coccyx, and exactly in the middle line of the perineum. This incision should be made deeper posteriorly than anteriorly, and the rectal

pouch should be looked for in the hollow of the sacrum. Pressure upon the abdomen will sometimes make the rectum bulge down into the pelvis and facilitate its recognition. Should much difficulty be experienced in finding the bowel, the coccyx should be removed in order to give more room. This procedure has been much advocated by several modern writers upon the subject. In some cases the undeveloped portion of the rectum is represented by a fibrous band, and when this is recognized it may be used as a guide to find the bowel. When the bowel has been found an attempt should be made to bring it down and affix it to the skin edges before opening it. This is not, however, always possible, and it may have to be opened *in situ*. Should it be impossible to find the bowel the only thing left to do is to perform colotomy. Sometimes after opening the abdomen and finding the bowel, it can be pushed down and brought out at the perineal wound, and a perineal opening thus established. The prognosis of true imperforate anus or rectum is not good.

As to prolapse, whereas in children prolapsus recti can usually be cured without an operation and always by quite a simple procedure, in adults it is a very serious condition which is practically never curable without operation, and often not with operation. In children it is most frequently met with between the ages of one and five years. It usually results from loss of fat. The pelvic and abdominal organs in a child are largely dependent for their support, and for the maintenance of their proper relation to one another, upon the surrounding fat, and when as the result of neglect or illness this fat is suddenly removed, there is a tendency for the rectum and other organs to become loose. It should also be remembered that in the infant the pelvis is very narrow and funnel-shaped, so that the intra-abdominal pressure is exerted upon the apex of this funnel, which is the anus, and when the child strains in the sitting position there is a tendency for the lining of the rectum to be pushed out of the anus and everted. The common cause of rectal prolapse in children is some wasting illness, especially if this is associated with straining from cough, diarrhea, or phimosi. Thus we find prolapse often occurs after whooping-cough, summer diarrhea, bronchitis, and measles. Among the poorer classes it not infrequently results from neglect, and improper or insufficient feeding. Occasionally it results from a rectal polypus.

The bowel having once come down usually does so each time the bowels act, and if it is not at once replaced the anus becomes stretched and inactive. The size of the prolapse varies from about one inch to several inches in length, and when large the peritoneal cavity will be between the two anterior layers, and may contain intestine. In the majority of cases if the child is treated properly at once the condition is easily curable. All that is necessary is to attend to the child's general condition, especially the diet and general hygiene, and to give iron and nux vomica to improve the general muscular tone. In addition to this the child should not be allowed to defecate in the sitting position, but this act should be performed either on the side, or better, in the squatting position over a newspaper, etc. In the squatting position, which is the natural one for defecation, the muscles of the pelvic floor are tense, and the rectum and anus are well supported, so that prolapse does not easily take place. The bowels should be regulated to insure an easy stool daily without straining by one or two

teaspoonfuls of liquid petroleum, or olive oil. If this is insufficient a small enema may be given.

When these simple measures fail an operation is necessary. The best is linear cauterization of the rectal mucosa by a narrow Paquelin cautery, the burns being made deep enough to cause some inflammation of the muscular coat, as the object is to fix together by adhesions the various coats of the bowel and the surrounding muscular tissues. An alternate operation is to ligature two or three loose folds of mucosa, in much the same way as in operating for piles, the object again being to cause the various coats of the bowel to adhere to each other in two or three places. Whatever operation is performed it is most important to prevent the bowel coming down for two or three weeks after, and the child should therefore have his stools in the recumbent position. On no account should any attempt be made to cure the prolapse by injections of paraffin wax. This is liable to cause serious trouble later from abscess formation or stricture. With proper care not more than 6 or 7 per cent. of cases of prolapse in children should require operation. Before commencing to treat a case of prolapse in a child it is of course important to make certain that there is not a polypus of the rectum, or some obstruction of the urinary tract, such as a stone in the bladder or a pin-hole prepuce.—*Therapeutic Gazette*, October, 1914.

ETHER NARCOSIS.—Boothby (Boston) says it is necessary in order to induce proper ether narcosis that the inspired air must contain about 30 per cent. ether. It may be later reduced to 15 per cent., but not less or there will be a reverse ether diffusion from the blood and tissues to the inspired air. The well known clinical fact that sometimes in spite of energetic etherization the patient does not reach the desired deep stage of narcosis depends upon the fact that the passing of larger quantities of air through ether whose temperature becomes so much lowered that the inspired air saturated with ether is greatly cooled and is no longer able to hold 15 per cent. of ether. The practical indication suggested by this fact of physics is the warming of the ether in a water bath in order to compensate for the heat required for rapid ether vaporization and to permit the necessary 15 per cent. of ether saturation. The author has devised a special mask to facilitate this process.—*Abstr. Zentralbl. f. Gyn.* 1914—104.

THEODORE J. GRAMM, M. D.

THE ANAESTHETIC IN LAPAROTOMIES. Finsterer (Vienna) recommends local anaesthesia for all abdominal sections. Death from so-called shock from operation, in the absence of great loss of blood, is due to prolonged narcotic action consequent upon too rapid depression of the adrenal function from chloroform. Diminished blood pressure, as it occurs in peritonitis and bowel obstruction, if still further reduced by damage from chloroform, may result in great dilatation of abdominal vessels. In such cases the best anaesthetic method is local anaesthesia combined with small quantities of ether, which in small doses is the best stimulant. After local anaesthesia there is no vomiting to endanger the sutures. Liver changes and intestinal paralysis, following chloroform narcosis, are absent. Post operative pneumonia is very rare. Because of the good results observed in 200 sections the author recommends local anaesthesia in all cases and not only when general anaesthesia is contraindicated.—*Abstr. Zentralbl. f. Gyn.* 1914—106.

THEODORE J. GRAMM, M. D.

TURPENTINE IN INFECTIONS.—For about ten years Cramer (Bonn) has used turpentine locally in infectious processes in obstetrics and gynecology. His first experience was in febrile puerpera having an extensive infected area over the portia, the vagina and the perineum, covered with a smeary diphtheratic deposit. The rapid satisfactory result led to the use of this substance in other cases. Oil of turpentine is a distinct disinfectant; offensiveness of the lochia was promptly and permanently removed; and, when applied locally to a wound, the good effect was prompt. In some cases the author has applied it within the uterine cavity after removal of the placental remains. In placenta previa, the tampon used was saturated with turpentine and came away odorless. The author also made use of turpentine in the preparatory disinfection of the cervix and vagina, in operations for cancer and for prolapse.—*Monatschrift f. Geb. u. Gyn.*, Vol. 38—625.

THEODORE J. GRAMM, M. D.

PITUITRIN IN POSTOPERATIVE CONDITIONS.—Harvey has used pituitrin with brilliant success in doses of 0.5, in some instances repeated, in thirty cases of postoperative conditions, mainly deficient intestinal peristalsis and inability to urinate. Even in some cases of intestinal paralysis, from peritonitis the author believes he has seen a life saving result. The only unpleasant accompanying symptom was tachycardia, after repeated doses. The preparation is, of course, contraindicated in intussusception and volvulus.—*Abstr. Zentralbl. f. Gyn.* 1914—928.

THEODORE J. GRAMM, M. D.

TEST FOR WEAK HEART BEFORE ANAESTHESIA.—Stang (St. Petersburg) calls attention to a respiratory test to be applied before giving an anaesthetic. While in health it is easily possible to hold the breath for thirty or forty seconds; the time falls to ten or twenty seconds if there is present any weakness of the heart muscle. This ability to suspend respiration does not depend directly upon any capacity. In heart disease, even with good lung capacity, the patient cannot endure this test. In lung disease the patient may be able to hold the breath from twenty to thirty seconds. The author believes this test should always be used before inducing anaesthesia. If the test fail, local anaesthesia should be preferred.—*Abstr. Zentralbl. f. Gyn.* 1914—922.

THEODORE J. GRAMM, M. D.

THE TREATMENT OF METRORRHAGIA WITH THYROID EXTRACT.—Sehrt (Freiburg) advises the use of thyroid extract in pure cases of hemorrhagic metropathy, which are those where neither changes in the uterus nor in the ovaries nor in any other organ can be demonstrated. When such cases show the indications of hyperthyroidism, especially increased rapidity of blood coagulation, they may properly be treated with thyroid extract. The dose of iodothylin depends upon the blood picture, and this should be frequently examined during the treatment. Leukopenia and lymphocytosis, which, according to Kocher characterize both hypo- and hyper-function, may be observed to disappear and reappear from continued doses. The action of the preparation is cumulative and may continue long after its administration. Loss of weight may become progressive, and the condi-

tion of hypo-function may pass over into that of hyper-function. The author believes a curative action is produced by the treatment, and not merely the substitution of a failing thyroid secretion. In pathological uterine hemorrhage two conditions may exist: The blood poor in thyroid secretion may directly affect the ovaries, which is the determining organ in uterine hemorrhage, or there is an intoxication of the body in consequence of deficient destruction of poisons because of the deficient thyroid gland.—*Abstr. Zentralbl. f. Gyn.* 1914—674.

THEODORE J. GRAMM, M. D.

COMPARATIVE RESULTS IN THE TREATMENT OF ECLAMPSIA.—Schiller has compared the results obtained at the clinic at Königsberg since 1882 in the treatment of about 360 cases of eclampsia. One hundred and thirty-three cases were treated by means of mild chloroform narcosis, chloral and morphia with a mortality of twenty per cent. Rapid delivery was effected in twenty-five cases by means of version, and the mortality instead of improving, rose to 24.1 per cent and when Bossi's dilator was used the mortality was 37.5 per cent. Delivery after deep cervical incision was attended in three cases with a mortality of 21.3 per cent. Colpo-hysterotomy of Duhossen was only used in the most serious cases, forty in all, and the mortality was 20 per cent. Later, all cases were treated by rapid operative delivery, and the mortality varied from 12 per cent. to 22 per cent., according to the duration of the case up to twenty-one hours. Although these results were an improvement upon those obtained some time before, Stroganoff's expectant treatment, consisting in the use of morphine, chloral and chloroform to prevent the occurrence of the spasms, was used in twenty-four cases with a mortality of 12 per cent. The venesection was added to the treatment in eighteen cases and the mortality fell to 11.1 per cent.

At present, if the case comes under treatment within six or seven hours, active intervention is recommended, if the cervix is closed and the vulva oedematous, abdominal or vaginal Caesarian section is used. The great advantage of venesection was clearly illustrated. If the organism is so poisoned that operative treatment does not seem to promise much, the Stroganoff treatment is applied.—*Monatschrift f. G. w. G.*, Vol. 39—147,

THEODORE J. GRAMM, M. D.

THE DIAGNOSIS OF CARCINOMA OF THE FALLOPIAN TUBE.—Lipschitz has reported a case of primary carcinoma of the fallopian tube which occurred in an association with an old tubercular condition in the pelvis. All important aspects of the subject are fully considered, and the author also calls attention to the rare occurrence of cancer in the tube. The diagnosis is determined by the following symptoms: Periodical cramp-like pains in the tube with discharge of bloody serous fluid; later, constant discharge; the age of the patient; an oblong tumor found lying mostly behind the uterus, growing with remarkable rapidity and the formation of adhesions, fever being absent all the while.—*Monatschrift. f. G. w. G.*, Vol. 39, p. 33.

THEODORE J. GRAMM, M. D.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

GUNPOWDER FOR GUNNERS AND OTHERS.—A REMEDY FOR BLOOD-POISONING.—By John H. Clarke, M. D.—I am a little surprised that more has not been made of the striking observations on "Gunpowder," contributed by "Layman" to the *Homœopathic World* a few years ago. I was not long in finding plenty of cases on which to verify their soundness. Some of these I published in the *Journal Belge d'Homœopathie*, February, 1913, but as no one seems to have noticed them, I wish once more to emphasize the value of gunpowder as a remedy for all kinds of blood-poisoning. And as sepsis from septic wounds, ptomaine poisoning, poisoning from meats that have been unsuccessfully tinned, to say nothing of various kinds of preventive inoculations, are likely to be rife among soldiers, it is well that they should have the benefit of a remedy as potent as it is appropriate.

H. J. S., 30, a non-commissioned officer in an Indian regiment, who had been born in India of English parents, and had never before left it, presented himself to me on April 9th, 1913, in a fairly desperate condition. He was a man of very powerful physique, but the flesh was hanging about him, and he was covered from head to foot with sores, some discharging, some having rupia-like crusts, copper-colored stains marking the areas where sores or "boils" had previously been. His story was as follows: About two years before he had had an attack of "boils," and six months later another attack. At intervals of four or five months he had other attacks, ending up with the present one. All attempts to cure him having failed, he was advised that the only thing for him was a voyage to England and a change of air. H. J. S. was greatly valued by his superiors. He was an instructor in athletics, a total abstainer, and an expert gunner. In order that he might not lose his pay while absent from India, his officers arranged for him a course of instruction at Woolwich. He had been six weeks in England when he came to me.

So far from the change benefiting him, he had become steadily worse. He had had diarrhea during the voyage home. His digestion was bad and his sleep broken by the pains of his sores. He had lost two stones in weight in four weeks; altogether he had lost five stones. The neck, trunk, extremities were all affected. The inguinal glands were much swollen and painful.

On trying to get at the origin of the trouble, I ascertained that his previous health had been excellent. In 1874 he had been bitten in the finger by a squirrel and his finger had been bad for a long time afterwards. He had had attacks of fever, but almost always in association with the

attacks of "boils." The first attack occurred about the end of October, 1911. At the end of the previous October he had been vaccinated, for the second time in his life, and it "took well." It did, indeed. To me, the connection was obvious between the present state and the vaccination.

At the same time as my patient, a fellow-soldier was also vaccinated, and he also soon afterwards became ill, in a somewhat similar way. But this man was not temperate in his habits and his illness was put down to alcohol by his medical officers. This would not do for my patient who was a life abstainer. The only other hypothesis was syphilis. The possibility of this he steadily denied, and his word was borne out by the Wassermann tests which constantly gave negative results, though tried again and again. My diagnosis was hesitatingly—vaccinosis, secondary or tertiary. This was confirmed by the fact that the sores were *thickest and lasted longest on his right arm on the site of the vaccination scars*. The fact that his right arm was worse, was explained by his doctors as being due to over-exertion at cricket, bowling, etc. I ordered him gunpowder 3x gr. viii ter die and thuja 200 (Jenichen's), three doses in the week. At the end of the week he was a changed man. He had still plenty of sores, but they were healing, and the whole aspect of the man was different. His appetite had improved to such an extent that some indigestion and diarrhea had resulted from over-indulgence. His skin had improved altogether in appearance. On April 24th his weight was 10 st. 11 lbs. He had then gained much, but I have no record of his late weight. On June 5th he was 11 st. 11½ lbs., and on September 18th, 12 st. 8½ lbs. He had steadily improved all this time. New swellings or "boils" occasionally appeared and some sores with thickening on the hands, just below the wrists, especially the right, had proved particularly obstinate. I now omitted gunpowder and gave silicia 3x in eight grain doses in the same way, thuja 200, thrice a week, being continued as before.

A rapid change took place. A new outbreak of boils occurred. diarrhea set in, with bitter taste and coated tongue and some fever. The diarrhea was worse after drinking milk. The weight had gone down to 11 st. 8 lbs., but *the hands were much better*. Trombidium 200 soon cured the diarrhea, and then I gave gunpowder 3x gr. viii every four hours alone; leaving off the thuja. On October 16th he was very much better again in every way, his weight having gone up to 12 st 2½ lbs. Soon after, his time being expired, he left for India, having successfully completed his course of instruction, in very good condition. I gave him a supply of gunpowder to take home with him, and I told him to let me know if he had any relapse. As I have heard nothing since, I conclude he is now busy with his guns somewhere in the wide area of the war.

As no one has taken the trouble to translate my article in *Journal Belge*, I may summarize it here. "Layman's" indication "Blood-Poisoning" crude as it may seem, is, in my opinion, a keynote of the first order. The Norfolk shepherds who rub gunpowder on the wounds of sheep made in sheep-shearing, and who take it to cure or prevent ill effects from handling sheep suffering from "foot-rot," were guided by a sure inspiration. Boils, carbuncles, abscesses, blood-poisoning from pyorrhea alveolaris, come under its curative sphere according to "Layman."

My own first acquaintance with gunpowder as a member of the

Materia Medica, I owe to Robert J. Cooper—that indefatigable explorer of the by-ways of medicine—and it will be found recorded in the second volume of the Dictionary of Materia Medica under *kali nitricum*. “Nitric with sulphur and charcoal forms gunpowder. A teaspoonful of this in hot water was a favorite remedy for gonorrhea among soldiers in the days when black powder was used. In the lower triturations gunpowder has cured ascarides in adults. In some experiments made by myself with gunpowder 2x, severe herpes facialis involving right eyebrow and right side of nose was developed.” In the supplement to the Dictionary, which I hope one day to give to the world, gunpowder will not be confined to a mention under the heading of one of its constituents, but will have an honored place all to itself. I am pleased to note that “Layman” has confirmed my proving by curing shingles with gunpowder.

I sent to the *Homœopathic World* (1911, p. 360), a case of lumbrici cured with an infusion of gunpowder, told me by the patient, which happened some sixty years ago.

Here are the cases I contributed to the *Journal Belge*. (a) A lady, who had a very sensitive skin, was bitten by a gnat on the foot, resulting in swelling, inflammation and suppuration. There was a ring of inflammation around the bite, constantly spreading and detaching the epidermis as it spread. After the failure of several remedies, gunpowder 3x gr. viii ter die rapidly cured. (b) A gentleman had a bad cut with a knife on the left index finger. The wound refused to heal. An inflammatory ring stripped off the epidermis and spread more and more. Lachesis and other remedies failed to make any impression. Gunpowder rapidly cured. (c) A lady was very severely poisoned by sewer-gas. There followed swelling of the right arm and axillary glands of the right side. When she consulted me three months after the accident the right arm was almost fixed at the elbow joint with swelling. It threatened suppuration above and below. The axillary glands were as large as a hen's egg. Gunpowder 3x gradually resolved the trouble, and though the cure was interrupted by an attack of measles, the motility of the arm was fully restored. I commend gunpowder to the notice of our military confreres. Messrs. Epps have put up for me the 3x trituration in 2-grain tablets. Any patient of mine who leaves for the front I advise to take a supply with them in case of wounds that refuse to heal, or accidents from bad food or bad water.

(Gunpowder is also an excellent remedy for asthmatic conditions. D. M.).

ELAPS CORALLINUS.—The elaps corallinus is found quite frequently in the woods along the coast of Brazil, and its bite is much dreaded. Its colors are more brilliant and more agreeably combined than those of any other serpent in Brazil. Its head is small, covered with large polygonal scales; it swells behind and is continuous with the neck from which it is scarcely distinguished as regards size. It has round and small eyes. The jaws, which are little dilatable, are furnished with sharp teeth accompanied by fangs that rest on the venomous glands. The body is about two feet and one half in length; it is round, rather big in proportion to the head, and terminates in a sharp tail. The upper part is covered with smooth rhomboidal scales; the belly is covered with two hundred trans-

verse shields; the tail numbers fifty shields, which are disposed in two parallel rows. Its colors are disposed in the shape of rings of a vermillion-red, alternating with black rings, each two rings being separated by circular lines of a greenish white. The upper part of the head is black; likewise the first colored ring of the neck; the shields of the jaw are white, and are separated from each other by black lines. As in the case of the *Crotalus cascarella*, the poison was taken from the living reptile but not without danger. As soon as I had determined to institute provings with the poison of the cobra-coral, several of these reptiles were, at my request, brought to me on the same day, so frequent are they in the forests of Sahy. The animal which I had selected was wrapped up in a piece of linen cloth, and, after its head had been steadied with a little wooden pin, some eight or ten drops of poison were pressed out of its jaws by means of a pair of steel pincers, which I had received on one hundred grains of sugar of milk, and at once subjected it to the process of trituration in my mechanical mortar. They received six thousand successive turns. One grain of this mass was triturated a second time, and a grain of this second trituration a third time, each receiving three thousand turns.

Even whilst triturating the drug in my mortar, the most striking effects were produced by the simple emanations ascending from it. This phenomenon, however, is observed whenever I cause a somewhat active drug to be triturated in the mortar.

The symptoms which I have collected, are not a great many, but they can be depended upon. Most of the symptoms were experienced by several provers, and some of them have already been confirmed by treatment, among which may be mentioned *the oppression in going upstairs, the vesicular eruption on the feet and the deafness. This last symptom is of great importance on account of it being so obstinate.* For pulmonary affections the poison of the cobral may likewise prove a valuable remedy, especially for the second stage of phthisis (Burnett's bacillinum was evidently not in use in Brazil then). Elaps is very serviceable for chronic and persistent cough with derangement of the digestive function. It is also of use in mental alienation and cutaneous eruption.

The special action which this poison seems to exercise on the right side, the paralysis, the lancinations, have appeared to me worthy of attention. *The gyratory motions, the desire to move to and fro, the scaling off of the epidermis and several symptoms relating to the disposition and the mind seem to deserve the attention of the philosophical physician.* There certainly exist remarkable analogies between the symptoms of the cobral and those of the lachesis. *The differences, however, are sufficiently numerous to refute the doctrine that all serpent-poisons act almost alike and that the cobral, may be resorted to as a perfect succedaneum of the lachesis.* I am convinced of the contrary to such an extent that it is my belief that the poison of serpents alone, if sufficiently proven, will furnish the safest and most rapid means of combatting all human infirmities. Every epoch in the history of the world is undoubtedly possessed of therapeutic means which are most particularly homœopathic to the general character of the ruling maladies. Hence it is probable that when the human species shall have been freed from the miasms which now undermine its vitality, the simple flowers of the field will be sufficient to control the remaining indispositions.—*B. Mure's Brazilian Materia Medica* (Out of Print).

THE HAHNEMANNIAN MONTHLY.

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SOME CLINICAL SUGGESTIONS CONCERNING THE DIAGNOSIS AND MANAGEMENT OF EXTRA-UTERINE PREGNANCY.

BY

JNO. E. JAMES, M.D., PHILADELPHIA.

JUDGING from the prevalence of the literature upon extra-uterine pregnancy, it would appear as if this clinical state had been most thoroughly discussed in all its phases, and that there remained but a general "summing up" to represent the last word. The constant variation in the symptom complex or clinical picture, together with the difficulties observed in differential diagnoses, make this subject, to me, one which deserves our continued consideration; and this especially so, in view of the mortality rate associated with cases neglected, or only recognized when some serious and rather acute abdominal crisis first makes us suspicious of the underlying factor.

It is usual to speak of varieties of extra-uterine pregnancy according to the site of nidation of the fertilized ovum, namely: Tubal, abdominal and ovarian. It is essential to recognize these possible types, in order to facilitate differential diagnoses; at the same time, be it remembered that the majority of instances of gestation outside of the uterine cavity are of the tubal variety (86.7 per cent.).

Under abdominal pregnancy, it is usual to mention the primary and secondary forms. Primary abdominal pregnancy, wherein the fertilized ovum becomes implanted upon abdominal organs or tissues apart from the Adnexa, I look upon as a practical impossibility. There have been, apparently, a few authentic cases reported; yet, considering the recognized

inability of the peritoneum to show decidual reaction, in any degree, it must be concluded, at the most, that such a condition is an exceedingly rare possibility. On the other hand, secondary abdominal pregnancy, upon the basis of a previous gravid tube or ovary, is a very practical possibility, although a comparatively infrequent finding. We can readily appreciate the escape of the amniotic sac with contents, (foetus and fluid), into the free abdominal cavity through tubal abortion or rupture, or ovarian rupture. So long as the placental site is unviolated and the placenta remains attached, the symptoms associated with this may be slight, the condition may thus go to term unrecognized, or in some instances diagnosed, the pregnancy may be carried to term.

In recent years, ovarian pregnancy has commanded our attention through the cases reported. According to the study of these, two classes have been formulated, namely: intra-ovarian and extra-ovarian, according to the location of the ovum entirely within a graafian follicle or partly within and partly upon adjacent structures, notably, the fimbriae of the associated tube. Though numerous cases are now on record (4. 8 per cent.), it would appear that the location of the pregnancy in the ovary was discoverable only upon the operating table, and that, in the greater number of instances, the diagnosis of pregnancy was made only through routine laboratory examination of ovarian "tumors" removed.

For a practical consideration of our subject, it is the pregnancy in the fallopian tube which concerns us. The fertilized ovum may become embedded in any one of the recognized anatomical divisions of the tube, namely, intra-mural (interstitial) portion, isthmus, ampulla, fimbriated extremity. The site of election, it would appear, is the ampulla, a fact readily explainable upon embryological and mechanical factors. The isthmus is second in frequency. The etiological factors concerned, classified in general headings, are —(1) Inflammatory conditions of the tube (intra tubal and peri-tubal); (2) Mechanical factors (intra-tubal and peri-tubal); (3) Embryological and developmental causes.

It is a uniform opinion that, underlying the arrest of the fertilized ovum, in the tube are tissue changes in this oviduct depended upon some present or previously existing inflammation. We are accustomed to meet with tubal pregnancy in the pluriparous women, the one, then, in whom we have the

possibility of a previous puerperal septic condition, even in the absence of a distinct history; we are accustomed to elicit a history of relative sterility, this being depended, in all probability, upon the end results of a previous pelvic inflammation of one nature or another; and, we are accustomed to seek, from history and frequently find upon local examination, evidences of a venereal infection. The inflammation may have involved the tubal mucosa sufficiently, only, to induce agglutination of the plicæ of this membrane, resulting in diverticulæ and false passages, affording easy lodgement for the ovum, or absolute obstruction to its further passage; it may have destroyed the cilia action of the mucosa, with consequent retardation in the passage of the ovum; or, it may have wrought deeper tissue changes, with peri-tubal inflammatory exudate and adhesions, resulting in distortion of the tube and limitation in the calibre of its lumen.

Mechanical factors can and do induce tubal pregnancy. Distortion of the tube by traction or pressure of an associated ovarian tumor, or uterine neoplasm; narrowed tubal lumen from pressure of an associated tubal tumor (small fibroid nodule); presence of blood clot in lumen from previous menstrual period. Necessarily such factors may obtain in the nulliparous as frequently as in the pluriparous women.

From a purely scientific viewpoint, it is interesting to note my third group of causes. Without going into detail, let me state, that so probable are embryological and developmental causes, that we must be on the alert for extra-uterine pregnancy in the presence of healthy genitalia, and in the married woman who has never been pregnant. Cases operated and specimens carefully examined have shown, frequently, the complete absence of any diseased state in the tube, the seat of the pregnancy, as well as in the uterus, ovaries and opposite tube.

It is quite necessary that we appreciate some of the histological changes, gross and microscopical occurring in tubal pregnancy. In the first place, most of these changes are limited to that portion of the tube where the ovum becomes implanted. The entire tube has a tendency towards a general hyperplasia, early, especially in its muscular and mucous coats; not, however, appreciable to the examining fingers. The ovum imbeds itself in the mucosa and thus lies without the tubal lumen proper. At this point, the mucosa shows some decidual reac-

tion, without, however, the formation of a typical decidua such as would be found in the uterus. The ovum, in its further growth, presses forward, into the lumen the portion of the thickened mucosa overlying it; this latter, representing a decidua reflexa, but usually spoken of as the "Capsular membrane." Through the formation of the chorionic villi, with their typical epithelial elements, penetrating the enlarged blood vessels of the tubal wall, nutrition, to the ovum is established and, eventually, if rupture or abortion does not occur, a typical placenta will be developed.

Up until the period of one or the other of the usual spontaneous terminations, let us remember, that the tube, the seat of a pregnancy, will only show a nodular enlargement, varying in position and in size according to the point of nidation and the age of the pregnancy, the remainder of the tube, upon palpation, appearing normal. The pelvis proper, will be negative. This was well evidenced in a case I operated two years ago, where the tube showed a nodule in its isthmal portion of 2 cm. diameter, the remainder being normal; and in another case seen in consultation with Dr. Garner, ten days ago, which showed, when I opened the abdomen, a well advanced, tubal pregnancy in the ampulla, the isthmus and fimbriated extremity being perfectly normal.

We should remember, that, coincidental with the tubal changes, a typical enlargement of the uterus occurs, associated with the various "softened" signs of pregnancy. However, in cases wherein the pregnancy is well advanced, or goes to term as a secondary abdominal pregnancy, enlargement of the uterus never occurs over that corresponding to a normally pregnant uterus of the third month. Histological changes in this organ are identical to those occurring in a normal pregnancy, the endometrium developing a typical decidua.

It is quite the rule for us to hear of "ruptured tubal pregnancy;" and, this rupture dwelt upon as the most frequent sequela. The severity of the clinical picture of a true rupture, naturally, makes for ease of diagnosis; the gravity of such a case, usually "in extremes," impresses us. At the same time, be it remembered, that tubal abortion occurs more frequently than tubal rupture. This is my experience and corresponds to that of other clinicians. Tubal abortion, offers a more difficult diagnosis; many of these cases are operated upon for some "pelvic mass," the pregnant tube or hæmato-salpinx being dis-

covered, only, when the abdomen is opened. It may, rarely, be of a complete type: in other words, the ovum and its appendages become detached, break through the Capsular membrane and pass from the tubal lumen, either into the uterine cavity, or through the ostium abdominalis, into the abdominal cavity. Here, it may undergo dissolution, involution of the tube occur and the patient return to the normal. Invariably, the abortion is of the incomplete type, wherein the ovum and membranes become detached, break through the Capsular membrane, but fail to pass from the tubal lumen. Active bleeding occurs, the tube becoming enlarged, distended (sausage-shaped), the ovular mass enlarging by coatings of organized blood; the ostium abdominalis dilates, but not sufficient to allow the passage of the ovum; while through it, hemorrhage occurs into the peritoneal cavity, with the gradual development of a blood mass in the posterior cul de sac. The intra-abdominal hemorrhage is usually slow. This incomplete tubal abortion is most frequently met with when the pregnancy occurs in the ampulla. I have met with it, however, in cases of isthmal pregnancy.

Naturally, our greatest fear and dread, in all cases of tubal pregnancy, is its rupture into the peritoneal cavity, attended by severe shock and collapse, the patients becoming quickly moribund. In this connection, an interesting question has arisen as to whether the collapsic symptoms are to be attributed, entirely, to intra-abdominal hemorrhage, or whether there is not some vaso-motor disturbance associated, the actual bleeding, or amount of blood lost, being of secondary importance. It is quite safe and logical to presume that the internal hemorrhage, its rapidity at least, if not its volume, is sufficient to account for the extreme state of such patients. I have frequently met instances of incomplete tubal abortion wherein the abdominal hemorrhage was greater than in tubal rupture, but without evidences of collapse or shock. The following case is worthy of attention in conjunction with his discussion:

Mrs. M., 37 yrs. old, vii-para; admitted to the obstetrical wards of the Hahnemann Hospital of Phila., Jan. 6, 1912. Family and personal histories negative. Of her previous pregnancies, two were miscarriages, with no untoward symptoms following, the patient was not curetted: the remaining five were carried to term, the labors and puerperal periods being normal. Last menstrual period March 28, 1911; calculated

date of labor Jan. 4, 1912. About the middle of December, patient had a fall from a bench, upon which she was standing to hang up her washing. No effect was noted, until Dec. 30, 1911, when the patient noticed a slight, red, vaginal discharge, followed by some minor crampy abdominal pain. Believing labor was started, the attending physician was called. His examination at this time revealed a normal pregnancy, a cephalic presentation, fixed at the pelvic brim, and the patient not in labor. Further observation showed, on Jan. 2, 1912, a temperature elevation, gradually increasing to 102° , with corresponding pulse rate, and absence of foetal movements; for these symptoms, the patient was sent to the hospital. Upon admission, abdominal examination showed, a hard, rounded, tumor, extending well above the symphysis pubis, and a foetus freely movable in the abdominal cavity. A tentative diagnosis of secondary abdominal pregnancy was made and I opened the abdomen. The cavity was filled with free blood and quantities of well organized clots; a full term, dead fetus with cord and placenta attached lay free in the cavity; and a large, irregular rupture along the posterior wall of the uterus, involving the lower half of the body was found. After proper preparation of the peritoneal cavity and suturing of the uterine laceration, the abdomen was closed, the patient making an uneventful recovery.

The symptoms usually attendant upon a uterine rupture at term, whether spontaneous or occurring upon the basis of ill-advised operative procedures, are severe, the shock being well marked. In this case, these were absent. The internal hemorrhage had been excessive, yet collapsic manifestations were wanting. The probability is, that the bleeding was slow, due to the complete escape of uterine contents, allowing this organ to undergo contraction.

In instances of rupture of a tubal pregnancy, it is my belief, that the collapsic condition associated, depends largely, upon the rapidity of the internal hemorrhage, concomitant with the time of rupture. Subsequently, this bleeding is of a comparatively small degree, and usually slow. This fact, as I will note later, can be made use of in the management of those cases first seen "in extremis," permitting us, then, without jeopardy to the already grave prognosis, to take a little time in which to "treat the patient," before adding the extra shock of an abdominal section.

In the diagnosis of a tubal pregnancy, we must freely admit, the varied and incongruous histories and objective findings of practical experience. In those cases personally met, there have not been two similar cases. I have had the occasion to meet the classical case (the most typical one two weeks ago); I have, likewise, found tubal pregnancy upon operation, where history and local findings afforded no thought of the true condition. There are, however, certain guides to follow, certain cardinal symptoms, to be looked for, in order to be comfortably sure about our cases. In the first place, I would insist upon the absolute necessity that in all cases of pregnancy, without exception, internal examination be made—routinely,—in the early months; and all pregnant women be closely observed until we are absolutely certain that the pregnancy is a normal, intra-uterine one. I grant the fact that a vast proportion of women do not apply to physicians until pregnancy is well advanced, unless untoward symptoms compel them to do so. This is due, solely, to the carelessness of physicians, in the past, in regard to their obstetrical duties and obligations. Every physician should do his or her part in teaching the above fundamental rule of health. The time is at hand when we should correct the errors of the past.

The cardinal guides in the diagnosis of extra-uterine pregnancy would be the following: a relative period of sterility; irregularity in menstruation or irregular, uterine bleeding in a woman otherwise normal and regular; the pelvic distress, or intermittent pain, in the lower abdomen; the usual symptoms and early manifestations of a normal pregnancy. Associated, an enlargement of the uterus, with the “softened signs” of early pregnancy; and an unilateral enlargement of the fallopian tube, of varying size and shape, together with a certain amount of tenderness. Temperature and pulse normal; usually the patient believes she is pregnant, but does not understand the bleeding and pelvic symptoms.

With tubal abortion oncoming, there will be attacks of sharp acute pain referred to the pelvis and lower abdomen; the affected tube will enlarge, rather quickly; and, if the case be observed, there will gradually develop a bulging, doughy mass in the posterior cul de sac, (pelvic hematocele). Secondary anemic manifestations occur, but usually, will be slow in appearance; the exception to this rule, being the unusual case, where the internal hemorrhage is rapid. The temperature, typically, is nor-

mal, showing some tendency to elevation with oncoming peritoneal symptoms; the pulse will be slightly increased, the degree depending upon the duration of the abortion, and extent of bleeding.

The collapsic picture of a case of rupture of a tubal pregnancy into the peritoneal cavity, it is not necessary for me to detail. I would emphasize, however, the early and marked abdominal distention which obtains; and, upon internal examination, the sensation of a "floating uterus," with distinct, fluctuating bulging in the vaginal fornix. The temperature is, typically, subnormal, the pulse markedly accelerated and usually thready.

Extra-peritoneal rupture of the pregnant tube (between the folds of the broad ligament) may occur. It is, however, rare; the collapsic symptoms are decidedly less aggravated, the abdominal distention, early, is absent, and, internal examination reveals a tense, boggy mass filling one side of the pelvis, extending well down below the plane of the external os, the uterus displaced upward and to the opposite side.

Differential diagnosis calls for a consideration of the following:

1. Pelvic inflammatory states.
2. Ovarian tumors (cystic ovaries).
3. Pregnant uterus, plus cervical polyp.
4. Threatened abortion; incomplete abortion.
5. Double uterus (pregnancy in one horn).

Time will not permit the discussion of these conditions, individually. I present them "en groupe," that they may be associated in our minds in cases presumably of ectopic gestation. Further, I would emphasize the absolute necessity of a careful internal examination of every case of supposed abortion, no matter how characteristic the clinical picture may be, in order to eliminate the possibility of extra-uterine pregnancy. This must be a routine measure, before any curettage in such a case, is practiced.

Again, I would call your attention to a personal observation in the second and third months of a normal pregnancy, namely, in a large percentage of cases, to a well marked transverse enlargement of the pregnant uterus. The body is flattened in its antero-posterior diameter, the cornea offering the impression of exaggerated development. If the uterus is deviated laterally, this corneal enlargement may easily simulate an intramural

pregnancy or possible tubal enlargement. I have had several cases referred to me for diagnosis, under these circumstances, the attending physicians being suspicious of extra-uterine pregnancy.

In so far as the management of extra-uterine pregnancy is concerned, to my mind there is but one rule to follow; namely, as soon as the diagnosis is constituted, open the abdomen. This rule unquestionably, offers the safest procedure and the best mortality rate.

There are exceptions which prove the rule. In the first place, true instances of abdominal pregnancy, wherein there is absence of untoward symptoms, may be, and in the interest of the child, I believe should be carried to term, under strict observation. Should symptoms intervene, however, from pressure of the fetus free in the peritoneal cavity, from death of the fetus, then abdominal section should be immediately performed.

Again, in the case of ruptured tubal pregnancy, first seen when the patient is in a moribund state, it is my belief that abdominal section, immediately done, adds to the shock present. It is my opinion, in these cases, that such measures as will combat the shock should first be instituted, and the abdomen opened only after a certain reaction is obtained. In these cases, the free use of morphia and the introduction of saline solution, together with mild cardiac stimulation as needed, are most valuable measures. Internal bleeding is continuing, to be sure, but of a lessened degree following that associated with the actual rupture. Consequently, this offers time for conservatism first, and then, at the earliest, reasonable period, open the abdomen.

I believe it to be absolutely hazardous to attempt any vaginal operative procedures. Curettage is positively contra-indicated; vaginal puncture for diagnosis or to relieve a pelvic hematocele offers added risks of bleeding and shock. This latter operation would be called for, only, in that rare case where, following tubal abortion, the pregnant tube undergoes involution, leaving a pelvic hematocele which becomes infected, developing, then into a typical pelvic abscess.

Abdominal section, then, is the only "modus operandi"—with it, only, can the seat of the ectopic gestation be removed, and perfect hemastasis be secured.

We can disregard the presence of the uterine decidua. This will readily take care of itself; either will it undergo disintegration and be discharged in the lochia of the first few

days post-operative; or, it will be thrown off as a complete cast of the uterine cavity. Subsequently the uterus undergoes normal involuntary changes.

AN UNUSUAL UTERINE FIBROID.

BY

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(Read before the Surgical, Gynecological and Obstetrical section of the Homœopathic Medical Society of the County of Philadelphia, November 25, 1914.)

MRS. H. was referred to me for operation for a supposed gangrenous uterine polyp, about the size of a lemon, which appeared at the vulva.

At first glance the tumor did appear to be a polyp protruding from the cervix, but upon careful examination the supposed cervix was found to be adherent to the neck of the polyp in its total circumference, which is unusual, and upon completing the examination a large tumor was discovered filling the pelvis. The anterior vaginal cul-de-sac apparently ended in a canal, gradually diminishing in size, the end of which the finger could not reach. The uterus could not be definitely located and we were unable to determine whether it was a part of the large tumor or if it was displaced to some abnormal position by the tumor.

On account of the sloughing polyp in the vagina and the uncertainty of the position of the uterus, we opened the abdomen for the purpose of exact diagnosis.

The uterus was found to be small, pushed into an anterior position by the large tumor, and it was impossible to determine whether the cervical canal communicated with the tumor or with the anterior pouch of the vagina until a sound was introduced. This proved the relation was with the anterior vaginal pouch and I now comprehended the true condition present.

The tumor had developed from the lower, posterior part of the uterus and instead of growing mostly upward, had pushed its way downward, separating the peritoneum from the posterior vaginal wall, filling the pelvis and pushing the uterus up-

ward and forward. Probably from pressure necrosis, a part of the tumor had pushed forward through the posterior wall of the vagina and elongating from pressure and traction appeared



FIG. I. The black spot indicates the probable origin of the tumor. The dotted line is the peritoneum.

as a polyp, and the vaginal wall through which it protruded was drawn down enough to look exactly like a cervix.

The large tumor could easily have been delivered through the abdominal incision, but as the sloughing polyp was attached

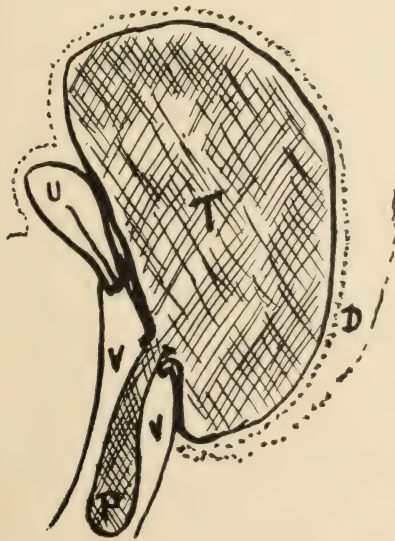


FIG. II. U, uterus; T, tumor; V, vagina; P, polyp; D, cul-de-sac of Douglas.

to it we thought best to close the abdomen, amputate the polyp, including a cuff of the vagina, and close the vaginal incision. A week later, after the vagina had been made as clean as possible, the tumor was removed through an incision in the posterior vaginal wall. The peritoneum was not opened in the delivery.

Had it not been for the fact that the tumor was soft and could be moulded to the pelvis like a baby's head, it could not have been delivered intact by this route. The firmest attachment was to the lower part of the cervix and the bleeding, with the exception of two or three large vessels, was easily controlled by a gauze pack.

As in most instances the diagnosis was very simple after it was made; but was, I assure you, very confusing at first.

I have not seen or heard of a similar condition.

It is no uncommon thing for a fibroid to become more or less detached from the uterus in this position and continue to grow; but to have a part of the tumor push its way through the posterior vaginal wall and appear at the vulva like an ordinary uterine polyp, was a new experience to me.

Appended is the pathological report by Dr. Norman S. Betts who kindly assisted me at both operations.

Specimen consisted of a sloughing, dark red, firm polypoid tumor measuring 3 x 4.5 c.m. in diameter. At its base it is attached to a small piece of apparently normal vaginal wall, through a collar-like ring in which the tumor projects. The vaginal epithelium is turned in on all sides to form a cuff and resembles the normal external os uteri, widely dilated. The tumor seems firmly attached on all sides to the sub-epithelial connective tissue of the vagina.

Microscopically:—Sections of the tumor have the ordinary appearance of a uterine myoma, but showing round cell infiltration, edema and moderate hyaline degeneration. The vaginal cuff consists of normal squamous epithelium. The outer surface of the tumor is necrotic.

CONCERNING THE CLASSIFICATION OF DISEASES.

BY

DOUGLAS MACFARLAN, M. D., PHILADELPHIA.

THERE is nothing quite so exasperating to those who have formed the habit of reducing all things to system as to come across something that defies this simplification. To every one of us comes the need of placing things and aligning our ideas and knowledge in a related sequence and in relative value. To each of us then is commended the task of putting in order his classification of disease. And this should not be a matter of casual interest in spite of the generality of the work, for it is upon such generalities reduced to particulars that we consider the treatment of individual cases. The feverish patient may be the benefited or abused one according to our preconceived generalizations upon the feverish state; our treatment follows our principles subconsciously for either good or bad.

From the earliest historic times have the causes and sources of disease been considered, and from each conclusion reached has sprung a particular classification with its resultant particular treatment. The variety of evil spirits, the noxious humors, excessive or diminished irritability and (in our own day) errors of mortal mind and displaced vertebra, all have claimed a revised classification, all have developed their special treatments.

There have come, however, through this dense mist of human endeavor, certain systems of classification that seem more permanent and more satisfying. The more exactly scientific branches of our science have given us foot stones upon which we can stand with more comfort and with some slight assurance that the rude effrontery of newly discovered facts will not displace us. Anatomy, physiology, morbid anatomy, pathology, pathological physiology, bacteriology, protozoology, have given us facts that make us feel a little more confident that "we know what we are doing" when we are treating certain diseases.

Following the developments of these branches there has appeared our present variety of classification based upon etiology, symptomatology, pathological anatomy and pathological physiology.

On first appearances an etiological classification would appear ideal, but its adoption would mean the strengthening of the

many hypotheses as to the cause of certain not-well-understood diseases. The fact will long remain that the exact etiology of many of our common diseases will be unknown. Nevertheless, the conclusions of bacteriology and in recent years of protozoology, have added and will no doubt continue to add new names yearly to this list, and the dreams of Boerhaave and Hoffman may yet be realized.

The tissual, systemic, organic or topographic system supported by Broussais,¹ Prost, Boisseau, Bouillaud and others, is limited by the fact that few diseases are to be considered strictly local. The acute diseases, such as the pneumonias, meningites, eye and ear conditions, might well be classified here, but the system would be obviously inadequate for the host of diseases showing reactions in every tissue. There is still this to say for the plan,—that although “Pathological formations and types are slightly different in different parts of the body, as is the case with animals or plants in different climates and soils, yet the species is invariably and always to be recognized.”²

Pathological anatomy, the product of the endeavors of Bonetus, Valsalva and Morgagni, which has been so ably advanced by the work of Laennec, Hope, Cruveilhier, Carswell and many others since this time, although offering greater claims upon our attention than any other method for investigating and distinguishing diseases is still defective.^{3 4}

“Pathological anatomy, gross or microscopic, is not pathology, the lesions left after death are not the disease.”⁵ Classification under this head will always leave something to be desired, for the simple or complex picture of the effects of the morbid action cannot give a complete idea of the disease; they should be considered as nothing more than a kind of special symptomatology. This is distinctly Hahnemann’s idea on this matter. No doubt by a study of morbid pathological exhibitions we can infer much as to the mode of action of a disease,—and in this respect the science of pathological anatomy has given us great aid.

Humeral pathology is complementary to gross and microscopic pathological anatomy and under this head a number of

¹ Examiner Vol. II. pp. 489.

² Cruvelbeis, *ag. M. Sci.* 1844, Oct. p. 512.

³ Schultz *General Pathology*: London & Edinburgh.

⁴ *Monthly Journal of Medicine*, Aug. 1845.

⁵ John M. B. Hardin, *Isopathy of the Parallelism of Diseases*.

metabolic and dyscrasic diseases have been classified; but it meets with the same objection as does the above. Its investigation, inaugurated by Brown-Sequard and enjoying immense popularity for a period, opened up the field of animal extracts in their use in diseased conditions. It is, however, obviously inadequate to include in its classification more than a few diseases such as the anemias and the diseases of the ductless glands. Magendie, Andral, Dumas, Donné, Prout, Liebig, Raciborski and Muller are the figures (nearly all from the French school) that have been associated with the endeavor.

The functional or physiological plan proposed by John Mason Good offers to classify all diseases under the headings of altered physiological functions. In its ultimates it amounts to the same as classification according to symptomatology, and will be considered with it.

It is most natural to describe anything by its most evident outward appearances, and from this tendency has sprung probably the best and most practical classification of all. Diseases, from the earliest times, have been given names that amount to "symptom labels" and many of these still hold fast among the laity. Witness the evolution of migraine from hemi-cranium; also such names as black vomit, break-bone fever and "yellow janders." Classification according to symptomatology formed the basis of the systems of all the earlier writers: Sauvages, Sager, Linnaeus, Vogel, Cullen, McBride, and Selle. It is one of the distinctive features of the principles of Hahnemann, who took such cognizance of the totality of symptoms, representing the disease, as to militate against *any* tendency to classify.

There seems but one objection well sustained against this system, and with refinements in observation this objection can be further restricted. It is the fact that many diseases distinct in their nature when seated in the same organ will exhibit themselves in phenomena so identical as to be confounded. This is of course a great obstacle to classification by symptomatology. Take, for instance, the fallibility of a diagnosis representing jaundice,—vomiting and pain. The actual conditions might be one of any number of liver and gall duct conditions. We cannot here base a diagnosis on so-called objective and subjective symptoms but must bring to our aid a host of "special symptomatologic" facts brought out by physical examination, pathological chemistry (such as examination of vomitus) and the uses of the X-ray.

There are a number of conditions the diagnosis of which cannot be reached without the aid of our modern diagnostic methods. Yet, we have no reason to abandon that most practical of principles of the "totality of symptoms." There are thousands of conditions outside the pale of definite diagnosis, outside any possibility of classification except as to symptomatology and outside any known etiology. These can, under the present circumstances be only treated upon symptomatic lines.

It is regrettable that we know so little of the etiology of diseases, for in those cases where the causes are clear, results in cure usually rapidly follow. However, in our present situation we must be constructive before being destructive; we cannot abandon our ideas of symptomatology until we have something better to take their place. The cases with throbbing headaches, and with other vague general symptoms will continue to resist our attacks on their supposed causes and we will have to resort to our symptomatic similia and await the millennium. when all things will become known.

THE MODERN THERAPY OF PNEUMOCOCCUS INFECTION OF THE EYE.—Dr. Harry I. Gradle stated that in the past our ideas of virulence had been gained by animal experimentation, but it has been recently shown that the pneumococcus in a twenty-four-hour culture will assume one of three types.

First type, small, delicate, lanceolate, pneumococcus. It is very virulent. The second type forms the large diplococcus, somewhat more rounded; this is not virulent and is a more common type. The third type grows very luxuriantly and is not so highly virulent; in a culture it would be taken for a true streptococcus.

The new drug, ethylhydrocuprein, is almost a specific against the true pneumococcus in every respect. It has not a great penetrative power and we cannot use the drug in closed cavities because it is highly toxic. It is very soluble in water and, as it is irritating, should be preceded by a cocaine anaesthetic. The use of this drug in pneumococcic infection of the eye will cause this infection to disappear in two or three days.

In the pneumococcic infection of the tear duct, the treatment depends upon whether the condition is accompanied by stenosis. If not we can syringe the passage with one per cent. solution of ethylhydrocuprein and get rid of the condition in a short time. Our most important advances in the line of pneumococci affections of the eye have been made in serpiginous ulcers.—*Annals of Ophthalm.*

Transactions of the Homoeopathic Medical Society of the State of Pennsylvania.

FIFTY-FIRST SESSION

THE PATIENT AND THE REMEDY.

BY

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THE title chosen for this paper might well suggest the thought that its presentation to this society of homœopathic physicians was like "carrying coal to Newcastle." Be this as it may, I have a lingering conviction that the subject will bear occasional reiteration. It was Hahnemann who first enunciated the great truth,—to treat the patient and not the disease and, while our school has always maintained and emphasized this as one of its leading principles in the treatment of the sick, it is only during the last decade that the leaders of thought of the dominant school of medicine have adopted its philosophy.

It requires but a casual observer of things medical to see that this principle, even if its truth is acknowledged, is far from being generally put into practice, and this statement does not apply to the adherents of the dominant school only.

Is it not a fact that the vast majority of human ailments are treated symptomatically—that is, we treat the symptoms of the ailment instead of the patient. Great expectations have been entertained from the use of serums and vaccines and it cannot be denied that notable results have followed the employment of these therapeutic agencies: but it can also be said that disappointments have been many and disastrous results not a few. Save for the antitoxic serums of diphtheria, meningitis, and possibly tetanus, and the immunizing serum against typhoid fever, very little can be said in favor of the rest, notwithstanding the sounding of the commercial trumpet by the ever-busy commercial chemist.

It seems peculiar to human nature in general and medical nature in particular, to follow every ignis fatuus, to pounce

upon every new measure, every new sure cure and to follow it up with enthusiasm and high trumpet sounding. The aforesaid remarks apply to no particular school of medicine but are applicable to all.

Permit me for a little while to take a bird's eye view of the doings in our own school of medicine, to ask a question. Are we as successful in the treatment of diseases and especially chronic diseases as we should be and, as we would be if we followed the strictly inductive method as laid down by the master and followed by a steadily diminishing number of his adherents? The causes for the adverse picture are various and, it is not my intention to enter into any consideration of the same.

The homœopathic physician entering the arena for the conquest of disease does so with a vastly increased certitude of success over his brother of any other school. This may sound extravagant, but it is true. The condition for his success, however, rests on a thorough acquaintanceship with all branches of medical science and, if possible, a broad and liberal preliminary education, and that he must have a master knowledge of homœopathic materia medica and philosophy. Thus equipped the title of this paper will be to him the basic element in his battle with disease. To be more specific, the more the peculiar and characteristic symptoms of the remedy correspond with those of the patient—not his illness—the more certainly will the former prove curative in any given ailment of the latter. To illustrate the points of my paper, permit me to cite a few cases:

Miss M., age 48, was taken ill February 27, 1914, with an extremely severe pain in the lower part of the left chest. Saw her first, February 28th, and found her with a temperature of 101.2° , pulse 96, regular but compressible, respiration 26. Physical examination revealed crepitant rales in the lower left lobe and pleuritic friction sounds. The pain being worse on motion, I prescribed bryonia. Next day showed no material difference in condition, except that the respiration had risen to thirty-two. Continued bryonia during the following five or six days. The illness continued without being apparently in the least influenced by the medicine prescribed and the other auxiliary measures applied. The temperature never exceeded 102.4° , nor the pulse 106, the respiration varied between 32-38. The dullness over lower lobe of left lung well marked, with evidence of a small effusion in the pleural cavity. The sputum

during the first four days slightly rust colored; it then became greenish, heavy, and would sink to the bottom if placed in water. There was no improvement but rather an increasing weakness and I felt something must be done to arrest the downward course. I took the case. The red thread in the constitutional history was an intolerance of wet weather and its aggravating influence on any and every complaint the patient might have or become subject to; a constant inclination to feel cold even in warm weather. The general leaders caused me to look up *natrum sulph.* which covered all her other symptoms. It was given in the sixth trituration. With the beginning of its use, improvement set in and continued to complete recovery.

I was called to see D. S., age 2 years, October 3, 1914. The mother informed me that about three or four weeks ago, after some feverishness, the child lost use of his legs, so that from being a bright and active boy his movements now were confined to a to and fro motion of his gluteal muscles, by which, assisted by his upper extremities he was enabled to move about upon the floor. The muscles of his lower limbs were flaccid and somewhat atrophied. Sensation was diminished but not abolished. Electric tests were not applied. His lower legs were cold and clammy; there was considerable sweating of the scalp. Aside from occasional vomiting of sour substances, other symptoms could not be elicited. The remedy in this case was plainly indicated and, under *calcarea carb.* 30 the child made a complete recovery in about five or six weeks.

Mrs. D., aged 28, mother of two children, the youngest two years old, consulted me about February of the present year on a peculiar weakness in her feet and with growing inability to flex the foot. The weakness and paralytic condition gradually extending upwards with lessening cutaneous sensibility and loss of patellar reflex but without ankle clonus or the Babinsky sign. She could bend her knee, although with much lessened force but was unable to extend it.

The muscles became flaccid and there was some wasting, due perhaps to lessened use or to trophic changes, if any. She was no longer able to go up and down the stairs except by sliding on her buttocks. About this time her hands began to participate in the morbid process; there was paralysis of the adductor pollicis, some degree of atrophy of the interassei and especially of the muscles between thumb and forefinger. This, then, was

the status of the case about the end of April. I had prescribed tonics ad nauseam plus strychnia, in very material doses but it proved of no avail. Aside from massage no other mechanical or electrical appliances were used. I gave a gloomy prognosis and advised her removal to a hospital where she could have special care and treatment. To this, however, the husband, much discouraged as he was, would not consent and requested me to continue treating the case, notwithstanding the opposing opinion of the woman's family.

I continued the case. The great irritability of the patient, the morning headache and the gastric symptoms, such as belching and a sense of pressure one or two hours after meals; constipation with ineffectual urging to stool and some other minor symptoms; all pointed to *nux vomica*. I stopped all other drugs, gave placebo for three or four days and then *nux vomica*. Within a week improvement became manifest and continued. She has completely recovered.

These cases are not cited to show any particularly striking results, but merely to show that the well-indicated remedy if properly administered, will do the work according to an inexorable law, as exact as any other natural law. Be it understood, I do not make the statement that diseased conditions cannot be cured by any other method, nor assert that all pathological conditions not strictly surgical, are curable according to *similia similibus curanter*, but I do wish to go on record as saying that the physician who will strictly apply the homœopathic law will have no occasion to sit upon a pedestal and proclaim himself a therapeutic nihilist.

In a review of the recent meeting of the American Medical Association at Atlantic City which appeared in an old school medical journal, the writer speaks of the sections of pharmacology and therapeutics and makes the following statement: "Certainly therapeutics is too important a subject to be one of the poorest attended and one of the poorest presented." And yet we will run after the *ignus fatuus* only to discover that we have been looking for gold in frigid Alaska when we have diamonds in our own backyard.

DISCUSSION.

DR. J. M. HEIMBACH, Kane: A paper like this does not need much discussion; it gives us the facts. In studying *materia medica*, however, I cannot help thinking that we all have to be detectives. It is just like when we send a man out to find a thief. You must not merely tell him to look for a thief, but tell him what kind of clothes he wears, his weight, his height, the color of his hair, and all these other differential points, before the detective can discover the thief. Likewise, in *materia medica*, we must know our drugs, their actions and other differential points, before we can pick out the remedy and prescribe successfully. In order to do that, we must do detective work in getting the symptomatology from the patients; and that is very hard to do. When they come to you and say, "Doctor, I have so-and-so; can't you give me something for it?" you have to argue with them in order to obtain intelligent symptoms to base a prescription on. We must stick to our work as a detective, and get the differential points, in order to make a good prescription.

All the drugs that Dr. Dietz has mentioned are the leaders, so to speak, and are noble remedies to prescribe; but there is too much rot in our *materia medica*, drugs that do not amount to much. These ought to be sifted out; but somehow, we cannot get the proper men interested in proving the drugs and getting the chaff out of our *materia medica*. If some of the Old School people would take up our drugs and prove them, it would be a good thing; but they use a remedy for a year or two, and then drop them and take up something else. If you could get them to look over the homœopathic *materia medica* and investigate it, it would not take long to prove that homœopathy is the real thing. I have practised long enough to know that the homœopathic remedy does the work.

I was once called to see a child at three o'clock in afternoon. I found the child vomiting, and prescribed ipecac and veratum album. The family called me up that evening and said that there was no improvement. I told them to discontinue the other drug, and give only the ipecac. At ten o'clock, I again visited the patient, and then found the arsenical symptoms as plain as the writing on the wall. I placed arsenicum, 6 X, on the tongue of the patient; and within two minutes, the child had taken half a glass of water and never vomited it. There was no more vomiting after that. That result was actually brought about in two minutes by the watch, by the administration of arsenicum 6 X, placed on the tongue, after

everything that could be put into the stomach had been vomited as fast as it was put in. Immediately after this, the child lay back and went to sleep.

I could duplicate, one after another, a great many such instances; although probably not quite so sudden. Very nearly so, however.

DR. G. H. BOYER, Pottsville: A paper of this sort, giving remedies that have been proved in clinical work over and over again, admits of very little discussion, as our friend, Dr. Heimbach, has just said. The knowledge that we have of Dr. Dietz and his long homœopathic practice, with his studious and analytical habits, leads us to consider him peculiarly well fitted to administer homœopathic remedies. I doubt whether we are all so well fitted to do so as he is. In fact, I know that we are not. I do feel, however, that listening to a paper of this kind is worth a month of discussion. It is so practical. The effects of the remedies mentioned are such as we have observed many times. There are few prominent remedies that he has not mentioned, and their scope of application as well.

DR. MAURICE M. FLEAGLE, Hanover: A paper as complete as that presented by Dr. Dietz is indeed hard to add to. He may have referred to this remedy; but I did not hear him, if so. I want to say that in these days of compulsory vaccination, we have children come to us with groups of symptoms that are very difficult to read; and that when you get a certain train of symptoms and can trace it in any way to animal poisoning, especially from vaccination, give thuya. It will help out in many cases. I am not concerned so much with what our Allopathic brethren are doing as with what we ourselves are doing. The only thing is for us to be able to recognize, as Dr. Dietz has done, the remedy and the class of patients to whom it is adapted.

DR. DIETZ, closing: There is very little to say in closing this discussion; but I wish to refer to a remark that Dr. Heimbach made, speaking of the difficulty in eliciting the symptoms in many cases. That was mentioned in my paper. I did not go into the history of the cases, because that is a different subject; but it is one that every homœopathist knows, or ought to know. It is a very important study, but a most neglected one. *The Organon* is one of the most neglected books in our profession. The vast majority of physicians, if

they have it at all, never look at it. It has been well said that the case history having once been well taken, the selection of the remedy is an easy thing; but taking the case history, especially when you have to do with patients who give you the diagnosis, is rather difficult. They just want you to give them something for the stomach or the liver, or something else; and that is an impossibility. You cannot prescribe in that way. If you do, the results will be what you might have expected, indifferent. Fortunately, a great many diseases are self-limited. If their cure depended on immediate action under certain conditions, there would be no recovery.

What Dr. Fleagle said about thuya is true. I did not touch on that point, because I did not think of it. It is certainly a valuable drug in all chronic ailments that are difficult to reduce and can be referred back to vaccination; for instance, in a case in which you are told that ever since the child was vaccinated, a certain condition has existed, the use of thuya is indicated.

NERVOUS DISEASES---DIAGNOSTIC VALUE OF SPINAL FLUID ANALYSIS IN.

BY

C. B. REITZ, M. D., ALLENTOWN, PA.

HISTORY.—Work on the spinal fluid began with the technique of the puncture by Quincke in 1891, but the investigations of the fluid in non purulent affections of the meninges, of the brain and cord, had its origin in France in the researches of Monod and Widal and their collaborators Sicard and Ravant who occupied themselves with the cystology of the fluid, and in the work of Suillan and Parant who investigated the protein contents in normal and pathological fluids. Since 1906, when Wassermann published his well-known method of complement fixation, much additional work has been done along that line and the literature has correspondingly increased.

Of the men whose names rank next to the pioneers in this line of work are Nissl, who, in 1904, devised a means of determining the protein contents quantitatively, Fuchs and Rosenthal who, in 1904 and 1907, invented a more accurate means of determining the cellular content and Noguchi who has developed a very accurate and delicate qualitative and quantitative test for globulin.

The later writings are to be found in the *Zeit. fur die Ges. Neu. u Psy.* by such men as Giacomo Pighim and Pietro Barbieri from the Reggia Emilia lab., also in the *Journal of Mental Science* by Robertson from the Edinburgh lab., Fieber, Khene and Scezi from the Frankford lab., as well as Schaller from our own San Francisco lab.

Many other experienced workers have, within the last few years written extensive articles on this subject. Other journals are *Johns Hopkins Bulletin*, *Review of Neurology and Psychiatry*, *Monatschrift fur Psychiatrie*, *Neurologes Centralblatt*, etc.

The subject of spinal fluid work is quite extensive and considerable time must be spent in making a complete and thorough analysis of each and every specimen removed.

Such analyses are conducted more or less routinely in many clinics but for practical purposes an examination is necessary only in certain selective cases, but it is these few cases that often depend on the laboratory for a verification of a diagnosis, or as a means of differential diagnosis, of such cases where the conditions of certain diseases appear similar yet the pathological changes are decidedly different.

In years gone by the clinician had to depend on his own resources and clinical experience to make a diagnosis, but with the advancement of time the demands were increased for a more correct diagnosis and a better understanding of certain conditions as to their pathological changes and thus gain information as to the mode of therapy; and again whether such pathological changes showed any improvement over and above the clinical aspect of the case.

With the advent of the laboratory and the many possibilities of the same, the attention of the clinician was directed towards that branch of medicine to aid him in his work, to act as a guide—if you please; and with these conditions in mind many men interested in this line of work at once came to the rescue and offered to investigate, as much as possible, the changes in disease and methods of determining these changes or anticipating such changes, and thus aid the clinician not only in his diagnosis but also the prognosis and treatment.

The laboratory is of special value in the study of nervous and mental diseases, and under the various tests, analyses, etc., that the pathologist is called upon to do, that of the spinal fluid constitutes one of the most important.

As previously stated, an examination of the cerebro-spinal fluid is often of paramount importance, and frequently in the beginning of disease an examination of the fluid will reveal a pathological condition which could barely be recognized in its incipient stage by mere clinical observation. This can no better be illustrated than by taking a case of paresis in which there is a change of character without any obvious signs of insanity, and this is frequently one of its early symptoms, and a cause of great anxiety to the family. A man whose sanity is not yet questioned often scandalizes his neighbors and ruins his good name by his conduct in public, or he dissipates his means and brings his family to ruin by his senseless extravagance or by muddling his affairs.

Nothing more need be said to indicate the value of an early diagnosis, yet it often is not diagnosed until the disease has materially progressed.

If a reliable examination of the spinal fluid were made in such a case the diagnosis would at once be obvious, as the pathological conditions are present in the fluid long before any clinical symptoms are manifest.

PUNCTURE.—The puncture is usually made by having the patient in the reclining posture with the back facing the light, the thighs flexed on the abdomen and the head on the chest, thus rounding the back and exposing the spinous processes of the vertebrae, separating their individual bodies and besides putting the dura on a stretch thus facilitating its puncture.

All instruments and other material must be prepared as for any major operation, as spinal puncture is, in fact, a major operation if one takes into consideration the possibilities, danger, complications, etc., of the case. The needle is introduced at the level of the fourth lumbar vertebra to a depth of about 6 c.m., depending on the depth of the superficial tissue. An experienced operator can immediately tell when he has entered the sub-arachnoid space.

The stilet is then removed and in all probability the fluid will flow (the stilet should never be removed before the sub-arachnoid space is reached).

About 10 c.c. of fluid is allowed to flow into a sterile test tube, as much as 50 c.c. may be removed without serious discomfort to the patient, but for practical purposes 10 to 15 c.c. is ample for all tests. In cases of high pressure the fluid must be removed very slowly, as the patient is liable to syncope, a

good guide to the patient's condition is the character of the pulse.

After the needle is withdrawn the puncture site is to be covered with a sterile dressing.

The patient should not be permitted to leave his bed within the first 24 to 36 hours.

A number of authorities claim that sudden death may follow spinal puncture, but in our institution we have yet to see a case that presented any alarming symptoms.

The cerebro-spinal fluid is an active culture media and can readily be inoculated and for this reason must be removed under perfect asepsis and kept on ice after removal, and this is quite feasible as the fluid will not freeze under average low temperature.

The better method, however, is to proceed with the various tests as soon, after removal, as possible.

NORMAL FLUID.—The normal fluid is a clear, limpid and colorless liquid having a sp. gr. of 1.003 with a pressure of a few m.m. of mercury, a trace of albumin, a substance that reduces Fehling's solution, and later proved to be sugar, a slight trace of protein substances and a few cells to a c.mm. of fluid.

Many variations of these substances are found in diseased processes, and are of value not only in their positive but also in their negative phase; and again not every condition is of like importance, some having more value than others and usually the findings as a whole must be taken into account in order to arrive at any definite conclusions.

PRESSURE.—The pressure of the fluid depends upon the posture of the patient, it varies in different individuals and particularly in different diseases. The normal average pressure is from 5 to 7 m.m. of mercury, although Wegelin gives it much higher.

Blood pressure has a slight influence on the fluid pressure especially in such conditions as arterio sclerosis, nephritis, aortic disease, uremia, etc.

In certain diseases where a high pressure is to be expected it may not be present due to a blocking of the needle with pus, as in acute epidemic meningitis, or the spinal end of the sub-arachnoid space may have a lowered pressure due to a blocking of the foramen of Magendi with adhesions and therefore there is no free communication of ventricles and sub-arachnoid space.

Several elaborate instruments have been put on the market to

test the pressure on both water and mercury scales. The simplest method is to note the condition of the flow from the needle, if the dropping is very slow the fluid has a low pressure, and if it comes in a stream it is excessive. The normal pressure is at or a little above a drop. The pressure is usually considerably increased in such conditions as tumor, meningitis, hydrocephalus, congestion of the sinuses, tetanus, etc.

APPEARANCE.—The normal fluid is perfectly clear and on centrifuging no sediment should form. If it is cloudy it either suggests an inflammatory condition or contamination with blood. Occasionally in making a puncture one of the sub-arachnoid veins is entered and free blood is found in the fluid; if this be the case the fluid on flowing will clear up till it is perfectly clear. In contradistinction is blood due to a meningeal hemorrhage, in which case the blood will be intimately mixed with the fluid and will not clear up on flowing, also in this latter condition it does not clot while that of a punctured vein will coagulate on standing. Any contamination with blood will interfere with the reliability of the tests.

In cases of cerebral hemorrhage a degree of turbidity will be found, depending on the severity of the lesion, which later will show as a discoloration of the fluid with hemoglobin varying from a yellow to a brownish color. Bigelow claims that in 90 per cent. of the cases of cerebral hemorrhage he can detect its presence by a spinal puncture if made within the first three days of the hemorrhage.

As previously stated a cloudy fluid either denotes hemorrhage or an inflammatory condition. An exception to this are the claims of Krönig who says that cloudiness may be due to cerebral softening, in which case a microscopical examination reveals the presence of nerve cells, fibrin, fatty granular cells and myelin.

Inflammatory conditions which produce a cloudy fluid are acute epidemic meningitis, cerebral abscess, tubercular meningitis, etc., but this latter condition is more often the exception than the rule as tubercular meningitis usually has a clear field.

BACTERIOLOGY.—In order to make a bacteriologic examination the fluid is centrifuged and the sediment stained by the usual method as for any other bacteriologic work.

Cultures may be made from the fluid, if it is removed under aseptic conditions. In order to isolate the diplococcus intercellularis the culture must be planted as soon as the fluid is re-

moved. A good all around media for this purpose is the ordinary agar-agar or better ascitic fluid.

Various kinds of germs may be found in the fluid depending on the condition present.

If a large amount of pus is found containing the diplococcus intercellularis the diagnosis is obvious, as also, is the presence of the tubercle bacillus; but if staphylococci, streptococci, pneumococci, etc., are present the diagnosis of some meningeal inflammation or brain abscess can be made but its etiology is doubtful if the clinical side of the case is not taken into consideration. The cause of such infections may be a septic endocarditis, aural inflammations, traumatisms, etc. Occasionally in rare cases of pneumonia, complicated by cerebral symptoms, the pneumococcus can be found. A similar condition may exist in typhoid fever.

In the African sleeping sickness the trypanosomes can be found with or without streptococci.

WASSERMANN.—One of the most important tests of the spinal fluid is that of the complement fixation. The Wassermann is the preferable method although the Noguchi modification of the Wassermann system may be employed.

The technique is the same as for the blood serum except that twice the quantity of fluid is used and besides it need not be inactivated as it contains no complement. With the Noguchi system inactivation is not practiced on any fluid to be tested.

A number of workers prefer the Noguchi method, claiming that it is of more significance from a diagnostic standpoint in para syphilitic conditions.

A great disadvantage of the Noguchi method is the small quantity of mixture in the test and another is the rapid sedimentation that takes place due to the small quantity of blood cells used.

A positive Wassermann reaction means a syphilitic infection and if it is positive in the fluid it means a syphilitic condition of the nervous system, this invariably is the rule.

It is the dictum at present of the Hamburg school that a positive Wassermann on the blood serum does not necessarily mean that the disease in question is syphilitic in nature, but that if a positive reaction in the fluid is obtained it is all the more convincing.

Recently Hauptman studied the frequency of the Wasser-

mann in a large series of cases. His conclusions are interesting and striking as he contends that the occurrence of a positive Wassermann in the fluid, in itself, is sufficient evidence that a syphilitic affection is present. Using a larger quantity of fluid than that used by Wassermann himself he found a positive reaction in 87 per cent. of the cases of tabes and 100 per cent. in cerebro spinal lues. With similar amounts he has never found a positive reaction in multiple sclerosis. He thus considers the negative outcome of the reaction of importance.

Frankel-Heiden, on the other hand, contend that there must be a fixed amount as to the quantity of fluid used, as the positive outcome may be only the expression of a general specific infection in which a small quantity of the specific substance has filtered into the fluid.

A comparison of statistics based on Nonne's findings using the original Wassermann method and Hauptman using larger quantities of fluid, is as follows:

	Nonne.	Hauptman.
Tabes	5 to 10%	80%
Cerebro spinal lues	5 to 10%	100%
Paresis	5 to 10%	90%

On a general average taken from a large number of observers the Wassermann is positive in 86 per cent. tabetics, 83 paralytics, and 90 per cent. cerebro spinal lues.

LOBULIN.—The second most important test of the spinal fluid is the protein or globulin estimation; some observers place the cell count in the second place, taking globulin third.

The normal fluid contains a very small percentage of globulin which exists either as serum globulin or as serum albumin. In spite of the amount of work done in this line there exists much confusion as to the protein in the spinal fluid.

The two most reliable tests for this substance are those of Noguchi and Nonne-Apelt.

The Noguchi method is the well known butyric acid test which is highly specific although not pathognomonic for syphilis.

The Noguchi is more reliable as it gives a correct quantitative estimation while the Nonne-Apelt, even though it is quan-

titative in a way, is used more frequently to test for the presence of globulin than for the exact quantity present.

The Noguchi estimation is designated by reporting as to the tube of lowest dilution that reacts; as .4 c.c., 2 c.c., etc. The normal quantity is at or above .5 c.c.

In the Nonne-Apelt method, if a ring is formed globulin is present and if on shaking the tube an opalescence results it is known as Phase 1. This shows the presence of serum globulin. If on filtering the fluid, of Phase 1, adding acetic acid and boiling a cloudiness results it is known as Phase 2, and is the serum albumin precipitated.

An increase of the protein elements indicates an organic disease of the nervous system. It is especially pronounced in meningitis and aside from that condition is probably more frequently increased in syphilitic diseases of the nervous system. It may be found in tumors and arterio sclerosis. The more common diseases that show an increase are paresis, tabes, cerebral lues and meningitis. A slight and transitory form may be found in epilepsy and dementia praecox.

In pathological conditions of the nervous system proteins are invariably increased, but this increase varies according to the character of the inflammatory condition.

Thus, in the acute forms of meningitis the serum albumin is increased while in the syphilitic or para syphilitic diseases it is the serum globulin which is increased over and above the serum albumin and upon this condition depends the Nonne-Apelt test.

Comparing the Noguchi and Nonne-Apelt methods by an examination of a large series of cases we have the following tables:

	Noguchi.	Nonne-Apelt.
Cerebral lues	100%	98%
Paresis	90%	95 to 100%
Tabes	100%	90%

In addition the Nonne-Apelt method shows a reaction in combined sclerosis in 75 per cent. of the cases.

The globulin reaction as applied to syphilitic diseases in which cases it is more frequently positive than negative, is fre-

quently given preference, by some observers, over the Wassermann reaction, based on the following table:

	Wassermann.	Globulin.
Cerebral lues	90%	99%
Paresis	73%	95%
Tabes	86%	95%
Other than syphilis	13%	2.8%

CYTOLOGY.—The normal fluid contains a few cells to a cmm. of fluid. The number is given different by different observers: on an average 2 to 7 cells constitute a normal fluid.

Various methods are at the disposal of the laboratory for the cellular estimation, the more accurate of these is by means of a counting chamber. Of the various chambers the Fuchs-Rosenthal probably gives the best results. Another method is to count the number of cells found in a centrifuged specimen of fluid, destroying the red cells by centrifuging in a large quantity of Turck's fluid. In counting such a specimen under high power dry lens a fairly accurate estimate can be made. The normal count by this method is 2 to 3 cells per field.

In all cases of inflammation of the central nervous system a certain amount of pleocytosis is present. In paresis 100 per cent. of the cases show this condition, the degree varies from time to time, being as a rule higher in the early stages of the disease, the average count being from 100 to 300 cells.

The degree of pleocytosis in syphilis varies according to the form of the disease, the greater the meningeal irritation the greater the pleocytosis. Septic infections also show a cell increase and this is especially true of epidemic meningitis.

DIFFERENTIAL CYTOLOGY.—Various methods have been devised for making a more accurate differential count of the white cells, but all of them are more or less at fault.

Alzheimer's method has long been in vogue, but it is very complicated. Probably the simplest method is to transfer the sediment on a slide and stain by either the Jenner or Wright method. It is the common experience of many workers that the dry method is very unsatisfactory, and for this reason prefer the wet method which is the same as that under the Turck centrifuged specimen. This method will be quite sufficient to distinguish between lymphocytes and polynuclear cells.

Many types of cells may be found in the fluid, such as polynuclear, lymphocytes, plasma and lattice cells, eosinophiles, etc.

The polynuclear cells are found in many para syphilitic cases, although the percentage is low; they, however, predominate in all cases of septic infections especially epidemic meningitis.

Plasma cells are found in many cases of syphilis, para syphilis, infantile paralysis, acute meningitis and tubercular meningitis. They are more constantly increased in cases of paresis than of tertiary syphilis. Other cell forms are of little importance.

COLLOIDAL GOLD.—An important test, and one that has come into prominence lately is the colloidal gold reaction. This reaction depends on the fact that colloidal solutions of gold are precipitated by electrolytes, and that protein substances protect the gold solution and thus prevent its precipitation. The quantity of protein matter present can be determined by the amount of protection afforded. The test as applied to the spinal fluid is quite simple. A series of eleven test tubes are used and dilutions of spinal fluid are made with geometrical progression, beginning with 1-10 in the first tube and running up to 1-5120 in the tenth tube, the eleventh tube being used as a control. Each tube contains 1 c.c. of mixture. 5 c.c. of the gold solution are added to each tube. The results are deduced from the change of color from the red of the gold solution to a faint blue or colorless solution resulting from complete precipitation. The fainter the color the stronger the reaction. The control tube should have a fairly deep red color. Normal fluids give a negative reaction. It is positive in all cases showing an increase of proteins. The reaction is especially adapted to general paresis.

ALBUMIN.—Of the less important substances albumin heads the list. This substance is normally present in the spinal fluid, but in certain diseased conditions it is greatly in excess. It can be estimated in various ways, but Nissl and Bramburg have devised what are probably two of the best methods, especially the latter. Nissl's method is a modification of Eshbach's method, using fractional quantities of both fluid and reagent.

Bramburg estimates the quantity by fractional dilutions and the HNO_3 contact ring. The test is similar to the Noguchi globulin estimation. According to Bramburg the normal content is from 1-6 to $\frac{1}{2}$ per cent.

The albumin content is more frequently increased in paresis than in any other disease, barring acute meningitis, in which disease the content greatly exceeds that of paresis. The increase in albumin is in direct proportion to the increase of globulin except in meningitis.

SUGAR.—The normal fluid contains a very small percentage of sugar. In acute meningitis it is absent, while in the more chronic forms the reduction occurs or it may be increased.

It is especially marked in tabes, combined sclerosis and uremia.

UREA.—Urea is a pathological condition if found in the spinal fluid. A spinal content of more than .2 per cent. indicates a severe uremic poisoning, anything between .1 and .2 per cent. is serious and does not permit of any definite conclusions although it speaks against a favorable prognosis.

Urea is frequently quite marked in cases of toxic psychoses of renal origin.

A special test, more or less diagnostic, is based on the principle that epileptics contain some toxic substance in their blood, which normally is not present. If a drop of blood from an epileptic patient is dropped in the center of the surface of 15 drops of spinal fluid of another patient, and vice versa, complete hemolysis will take place. A drop of blood from an epileptic brought into contact with his own fluid remains coagulated for days. Each patient thus has some toxic substance in his blood that is antagonistic to the blood of others but not his own.

MENINGITIS.—The classical case of epidemic meningitis shows the following characteristics: Turbid fluid, viscid, high pressure, plastic pus, fibrin and protein content very markedly increased. Cytologically it shows marked pleocytosis, practically all of the cells being of the polynuclear type. Stained specimens show the Gram negative diplococcus. The albumin contents is out of all proportion to the other findings. Sugar usually does not reduce in these cases.

As a special test for this disease is the principle of precipitins. If one drop of anti-meningococcic serum is added to 3 or 6 c.c. of the suspected spinal fluid a precipitation takes place. The test is usually positive in cases where the meningococci are not obtained in either smears or cultures.

Syphilitic meningitis has as a special characteristic the presence of the Wassermann reaction. The globulin is considerably

increased, the increase of albumin being in direct proportion to the increase of globulin. Usually a marked pleocytosis is present, the majority of which are lymphocytes.

Although the classical form of tubercular meningitis is sufficiently characteristic to be readily diagnosed, yet sometimes errors arise. The most valuable laboratory method is the examination for the tubercle bacillus. Characteristic, if not pathognomonic, of this disease is that the fluid on standing separates into a small fibrinous precipitate, in which, on staining, the tubercle bacilli can be found.

In cases where the Wassermann reaction is positive tubercular conditions can not be excluded, as it must not be forgotten that tubercular meningitis may occur in a case of syphilitic infection and that the reaction, by itself, is not sufficient for a diagnosis of syphilitic meningitis.

SYPHILIS OF THE NERVOUS SYSTEM.—The best diagnostic feature of this condition is the presence of the Wassermann reaction, this reaction is positive in the majority of the cases.

The number of cells is probably a fairly accurate guide to the intensity of the existing meningitis. The highest cell count occurs in secondary syphilitic meningitis where it frequently amounts to more than 1,000 cells to a c. mm. of fluid.

In enarteritis syphilitica the number of cells is usually normal, and in syphilitic spastic paralysis, where the lateral tracts of the cord are involved, the count is usually low, from 5 to 30 cells. In tertiary cerebro spinal syphilitis the count varies between normal and several hundred, according to the existing meningitis.

In tabes the pleocytosis depends on the individual case. If irritative symptoms are present or prominent the count is high, if of long duration and much degeneration the counts are usually low.

In paresis the counts also vary considerably, in the majority of cases the pleocytosis is moderate.

The most characteristic cell in paresis is the plasma cell, and it is one that is not normally present. It is always present in paresis and varies from 1.5 to 16 per cent. of all cells. They are less numerous in cerebral syphilis than in paresis. Another characteristic cell of this disease is the lattice cell. The majority of cells are made up of lymphocytes. It is interesting to note that although the total cell count may be low the great va-

riety of cells is always present and characteristic of the disease.

A highly sensitive test for paresis is based on anaphylactic principles. .02 c.c. of human blood is injected into a guinea pig. Two or three weeks later 1.5 to 2 c.c. of spinal fluid is injected into every 100 gms. of pig weight. If it is a case of paresis the pig will die of anaphylaxis.

CONCLUSION.—An analysis of the spinal fluid is an all-important step in neurology and psychiatry. Treatment cannot be instituted if the nature of the condition is not known with which we have to deal. Granted a correct diagnosis has been made, the treatment suggests itself, but without which we are rather at sea.

An analysis of certain cases, from time to time, will tell us whether the treatment is beneficial or not, as, for instance, in cases of paresis, tabes or cerebral syphilis by means of salvarsan or salvarsanized serum (Swift-Ellis treatment).

The various diseases showing changes in fluid contents have already been enumerated.

The Wassermann reaction is invaluable, the protein and cell estimation are most important, and the colloidal gold method probably in time will prove as valuable as any of the former. Albumin plays an important part in a few conditions, and in others is of equal weight to globulin.

All changes must be taken into consideration and not one alone is diagnostic of any disease but possible to all. In a few conditions one sign may be diagnostic as a bacteriologic or serologic finding.

A certain disease may be suggested by a spinal analysis, but we must not forget that although an opinion might be rendered from such an analysis, yet the various findings are simply symptoms of certain diseased conditions. Even though a diagnosis of epidemic meningitis may be made with certainty by finding the specific germ, yet the presence of that germ is simply one of the symptoms (a very important one) of that disease.

DISCUSSION.

DR. S. W. SAPPINGTON, Philadelphia: Lumbar puncture has been used, I believe, along diagnostic and therapeutic lines; and it is of great value to the general practitioner to get the advantage of all the knowledge that it will furnish

him. It struck me, while the paper was being read, that any practitioners who are not in a position to employ the Wassermann reaction themselves or by means of the laboratory could apply the butyric acid test of Noguchi. It is essentially an office test, and will furnish information regarding syphilis and tuberculosis by the examination of the spinal fluid. Examination of almost clear spinal fluid in patients suspected of having tuberculosis or syphilis is a valuable diagnostic aid.

DR. J. M. KENWORTHY, Philadelphia: I should like to ask, for curiosity, whether any observation has been made as to whether mercury inhibits the reaction on the spinal fluid, as it does on the blood.

DR. REITZ, closing: In our institution, we have used mercury in several cases of tabes. Such cases do not respond to mercury nor salvarsan so well as cases of tertiary syphilis. The Wassermann reaction shows about the same in both classes of cases. There is less influence on the Wassermann exercised by mercury in parasyphilis than in tertiary syphilis.

A PROBLEM OF THE MENTAL DEFECTIVE.

BY

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THE attitude of many toward the average mental defective, that he is harmless, is unfortunate. Any defective of higher grade than the idiot is a menace to society. The problem of the defective is not only a sociological one, but also an economic and moral problem of importance.

In the State of Pennsylvania there are fewer than 4,000, mental defectives in proper institutions. There are over 15,000 in improper institutions such as insane asylums, reform schools, penal institutions, etc. At large and unprotected, there are between 20,000 and 25,000 mental defectives.

In this larger number, through sentiment or ignorance, homes are ruined, associates contaminated, and hearts crushed. The mental defectives in our public schools in far too many cases are responsible for the breaking down of the teachers. It is from this 25,000 irresponsible unfortunates that a large percentage of prostitutes is drawn. This same 25,000 spreads innumerable illegitimate spawn. The legalized, but immoral

marriages of defectives result not only in families of twice average size, but in offspring of even lower mentality than that of the parents.

Venereal diseases are disseminated and contracted to a great extent by the unprotected defective. Normal children have their moral ideals shattered and vicious habits taught them by the uncared for irresponsible defectives.

(1) In his article entitled, "The Menace of the Feeble Minded," Dr. Goddard, "estimates that in the way of spreading disease and immorality and increasing the stock of feeble minded, a girl or a woman of child-bearing age, is three times as great a menace to the community as a feeble minded boy or man."

The Royal Commission of England, after years of careful investigation, reports that in that country, the feeble minded are increasing at twice the rate of the general population.

Amos W. Butler, of Indiana, in an address before the National Conference of Charities in 1907, said that "feeble-mindedness produces more pauperism, degeneracy and crime than any other force, that it touches every form of charitable activity, that it is felt in every part of the State and affects in some way, all the people and that its cost is beyond comprehension."

(2) Dr. Hastings Hart, of New York, writes, "The fact is generally accepted that in our prisons and reformatories at least 25 per cent. of the inmates are defectives. Among our juveniles from 25 per cent. to 50 per cent., and in one institution, where a psychologist was employed to examine the girls, 65 per cent. were feeble minded." Dr. Hart further says, "I do not know of anyone who is more deserving of care than these girls of 16, 17 and 18, who have the minds of children of 7 or 8, and the bodies of women, who are pursued and hunted down, and destroyed like rabbits."

(3) Quoting again from Dr. Goddard on "Feeble-mindedness":

"The importance of this problem is recognized in an instant when we learn that at the very lowest estimate, 25 per cent. of our criminals belong to this class. Perhaps 50 per cent. of our prostitutes are feeble minded girls: the same is true of our paupers, our drunkards, our ne'er-do-wells: in fact, we now recognize that a large percentage of the various classes of people who make our social problems, are mentally defective. Twenty-five per cent. is a minimum estimate, while it has been

shown that in all probability, 50 per cent. is much nearer the truth, and it may run even higher. A superintendent of one reformatory for men estimates that 75 per cent. of his inmates are feeble minded: careful tests of the girls in a reform school have shown 72 per cent. feeble minded. In fact, wherever there are any statistics, it invariably points to the higher figure."

We can not overlook the fact that with the mental defectives multiplying twice as fast as normals, it is simply a matter of time, when the normals will not only have a problem difficult to solve, but taxes still more difficult to pay. The number of dependent defectives in Pennsylvania has nearly doubled in the last ten years.

We have a serious problem which even suitable and valid marriage laws can only help in a small way. The medical school inspectors of this State, of which there are about 1,000, are being especially instructed, so Dr. Reyer tells me, particularly in the fourth class or rural and small community districts, to observe the feeble minded and make detailed reports of the same.

Our United States immigration authorities (particularly Drs. Knox and Foster, junior officers under our genial guest, Surgeon Sprague) are using ingenious methods, and the Binet-Simon tests elaborated are causing to be deported monthly, from Ellis Island, 75 to 100 defective immigrants. This great work will help in the prevention of the increase of mental defectives.

We can hardly help realizing the great necessity for the early recognition of this class of cases. It is of inestimable value to place the young defective in the proper institution as early as possible, so that of whatever training he is capable, he may have the greatest advantage. The immediate necessity is that of informing the general public as well as the medical profession concerning these evils. Thorough recognition of the situation is sure to produce a movement towards its remedy. Would that philanthropists could be influenced and that legislators could be moved to see the necessity of training the defective to support himself without polluting the social stream or impoverishing normal blood.

**COMPLICATIONS OF SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR
AND MASTOID.**

BY

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ALL general physicians are familiar with suppurative otitis media. Not infrequently, however, the micro-organisms, causing the inflammation of the middle ear, extend beyond its confines, and involve important adjacent structures. To call to your attention the complications which may then ensue, is the purpose of these remarks.

The nature of the complication which may develop is influenced by a number of factors, such as the degree of thickness of the various walls of the mastoid; the extent and direction of its cells and the state of the sutures of the temporal bone, that is, whether partly or completely closed.

Oftentimes in young children the pus present in the tympanum and mastoid passes directly through the more or less open petro-squamosal suture to the intra-cranial structures. This accounts for the relative frequency of meningitis of otitic origin in young children.

The variety of intra-cranial involvement also depends on the presence of various preformed ways through which the invading micro-organisms may travel, as through the oval or round window of the internal ear, or through the labyrinth, or along the facial and internal auditory canals. The virulency of the invading infectious bacteria, and the amount of resistance of the host, also influence the severity and extent of the complication.

Briefly, I will consider these various complications, with their more characteristic diagnostic symptoms. In a paper of this length it is obviously impossible to enter into detail of each one of these conditions, any one of which would afford abundant material for a separate paper. In so far as possible, the different complications will be considered according to the direction and extent which the infection has taken from the tympanum or mastoid.

Mastoiditis in most all instances is due to a spreading of the suppurative process from the tympanum to the antrum and other mastoid cells by the way of the aditus ad antrum.

Its symptoms in the early stages are comparatively few. Pain in the mastoid, with localized tenderness, is generally present. There is usually fever, which, as a rule, is slight in adults, and often quite high in children.

A valuable symptom may often be elicited by palpating the two mastoids. By this procedure the examiner may be able to detect a thickening of the suspected mastoid as compared with the opposite healthy one.

Edema over the mastoid points to a severe inflammation of its contents, if a furunculosis of the canal, or an otitis externa can be excluded.

If the quantity of aural discharge is very profuse, that is, more than our judgment tells us could form in the middle ear alone, it may be inferred that part of it has its origin in the mastoid. Oftentimes where the otorrhea has been very profuse, and becomes suddenly markedly diminished in quantity, there will occur a simultaneous aggravation of the pain in the mastoid.

Bulging or drooping of the posterior-superior wall of the inner end of the external auditory canal is probably the most constant symptom of suppuration within the mastoid. To detect this, the two external auditory canals should be compared under good artificial illumination, with the use of a speculum and reflector. The drooping area is often very tender when pressure is made upon it with a cotton-tipped probe.

Where the swelling over the mastoid is marked, it indicates an inflammation of its periosteum, or the formation of a subperiosteal abscess. The latter is usually the result of the pus having broken through the cortex. This condition manifests itself with greater swelling and edema, with redness of the skin, and with a forcing of the auricle forward and downward. Sometimes when the necrotic process has extended through the cortex, relieving the tension within the mastoid, there will occur a decided amelioration in the pain of which the patient complained.

In some cases, where the cortex of the external lateral wall of the mastoid is thick, and it is thin at the tip, the pus may break through in this direction. As a result of this, an abscess is formed in the region of the digastric fossa, beneath the sterno-cleido mastoid muscle.

In addition to the swelling which forms around the tip of and below the mastoid, there occurs in this complication a quite

characteristic symptom, that is, an inability to outline the tip by palpation, as compared with the opposite well side. Besides, these patients generally hold their heads in a characteristic way, so as to relax the inflamed sterno-cleido mastoid muscle.

Another symptom which may often be elicited is that by pressure over the swelling in the neck, pus may be forced through the tympanic perforation into the external auditory canal. This type of mastoid suppuration, associated with the formation of an abscess about and below the tip, is called Bezold's mastoiditis.

If the infectious process, instead of traveling outward or downward, as just described, takes an upward, external course, an abscess beneath the temporal muscle may result.

A temporal abscess may be a complication of middle ear suppuration alone, or may be an extension forward of a sub-periosteal abscess over the mastoid. In other instances, it may be the result of necrosis with fistula formation of the mastoid cells, which sometimes extend into the superior bony wall of the external auditory canal as far forward as the zygoma.

The symptoms are generally those of mastoiditis, plus the formation of a more or less fan-shaped swelling, conforming somewhat to the shape and location of the temporal muscle. It should be here mentioned that in some of these temporal abscesses, the infection has come directly from the tympanum, and not by the way of the mastoid cells. In these latter cases, the infectious micro-organisms seem to have penetrated beneath the mucous membrane lining the middle ear, and from there have traveled outward beneath the membranous lining of the external auditory canal, and up under the temporal muscle.

The purulent process may travel upward through the tegmen of the tympanum or of the mastoid, and, as a result, an extradural abscess of middle fossa may develop. Or, if the infection extends posteriorly, a peri-sinus abscess (that is, an abscess of the posterior fossa) may be formed. The latter route is the more frequent. Either of these conditions is a frequent complication of those cases of mastoiditis that have been permitted to go unoperated for a longer time than they should have. This complication is present in about seventy per cent. of the cases of acute suppurative mastoiditis, and is not regarded as a serious condition.

In chronic suppurative otitis media, with mastoiditis, extradural abscess is usually caused by an acute exacerbation of the

suppurative process, or from erosion of the surrounding bony structure by the pressure of a cholesteatoma.

The symptoms of extra dural abscess are often vague. Its presence is to be suspected if the patient complains of pain above or behind the mastoid, and especially if there be tenderness and edema of these regions. A quite characteristic symptom is a sudden increase in the quantity of the aural discharge, with an amelioration of the pain in the head, and the general ill feeling of which the patient may have complained. As a rule, in this condition, there are no characteristic changes in the pulse, temperature, mental state or eyes. At the time of the operation, after the cortex has been removed, the presence of an extra-dural abscess usually reveals itself by an outflow of pus with pulsation.

Sometimes, as a result of the sinus wall being bathed in pus, or by an extension of the infection via the blood-vessels which communicate with the sinus, there occurs a phlebitis of the sinus with the formation of a thrombus. The latter may be partial or total—that is, it may be simply a mural thrombus or one producing total occlusion of the large vein. This clot in the sinus may be either sterile or infected.

Early, and if the micro-organism causing the infection is of only slight virulence, and if the patient's resistance is high, it is barely possible that organization of the thrombus may occur, and no dire results follow. On the other hand, and what more frequently ensues is infection of the thrombus with its disintegration. Bacteriemia follows, together with pyaemia and probable metastatic abscesses, scattered over the body, but especially in the large joints, spleen, lungs, liver, intestines, etc. Frequently the infection of the sinus travels inward, producing a suppurative meningitis or cerebellar abscess.

Of the more characteristic symptoms of sinus thrombosis are a history of chills, with a sudden sharp rise of temperature, which falls almost as suddenly. With the remission in temperature, there may be a profuse sweat, and often there is an increase in the quantity of aural discharge.

Locally, there may be pain in the mastoid and edema. There is apt to be tenderness to pressure over the sinus. There occurs distention of the superficial veins of the corresponding side of the neck. Later, there may be a cord-like feeling extending along the internal jugular vein of the same side; sometimes there is also tenderness and swelling of this region and limita-

tion of the motion of the head and neck. There may be fulness of the veins of the retina with edema. If choked disc be present, it usually indicates that meningitis has supervened.

The patient, as a rule, lies quietly, and impresses one as being seriously ill. Later, there is icterus, metastatic abscesses, and meningeal symptoms. Death usually results from purulent meningitis, or general asthenia, dependent on metastatic abscesses in lungs, intestines, liver, muscles and joints. The toxemia causes a degeneration of the heart muscle.

Fifteen years ago the mortality rate of this complication was over eighty per cent. Now, with increased knowledge of the condition, and early surgical intervention, with preliminary ligation of the affected internal jugular vein, the death rate in Dr. Alexander's clinic in Vienna is only twenty per cent. The early recognition of the condition is the main essential to its successful treatment.

Another complication of mastoid and middle ear infections occurs when the internal ear is invaded. This involvement of the labyrinth may be due to the gradual absorption of toxins from suppurative otitis media, which may lead to degenerative changes in the auditory nerve ending with increasing nerve deafness. Or the pyogenic micro-organisms themselves may gain access to the interior of the labyrinth, either through a fistula, caused by necrosis, especially in the region of the horizontal semi-circular canal, or through the oval or round window. Inflammation of the labyrinth may be either serous or purulent, and may be either localized or diffuse.

The symptoms of diffuse suppurative labyrinthitis are deafness of abrupt onset; vertigo with nausea and vomiting; rotatory nystagmus to the sound side, and disturbances of the equilibrium. In the acute cases of labyrinth suppuration there is fever, which is usually high. On testing these cases there is a negative caloric reaction, and a diminished or negative reaction to turning.

This condition has a mortality rate of over seventy per cent. It often leads to suppurative meningitis and cerebellar abscess.

Otitic meningitis usually results from labyrinth suppuration, sinus thrombosis, extra-dural and brain abscess, and suppurative otitis media. While it may occur at any time of life, it is more frequent in children up to five years of age.

The symptoms vary as to whether the meningitis is serous or

suppurative, and according to its extent whether diffuse or localized, and, if localized, to which fossa.

Otitic meningitides are usually located first in the middle and posterior fossae. Later the process may become general.

Briefly, the symptoms are headache (which is usually severe and continuous), restlessness, continued high fever with a relatively slow pulse, twitching of the facial muscles, sometimes paralysis of the oculo-motor nerve, as shown by disturbance of the pupillary reaction and an inability to rotate the eye upward, downward or inward and diplopia. Later there may be fulness of the retinal veins, or choked disc, rigidity of the neck, with retraction of the head, positive Kernig's sign, delirium, paralysis of the extremities, involuntary defecation and urination, unconsciousness and death.

Brain abscess occurs more frequently from chronic suppurative otitis media. Different authorities give acute suppurative otitis media as the cause in from ten to twenty-five per cent. of the cases.

Abscess of the temporal lobe usually results from attic and antrum suppuration with a perforation of the tegmen tympani or tegmen antri. Oftentimes the aural discharge may be so slight that the patient is almost unaware of it. There may be only a small perforation in Shrapnell's membrane, through which there is a scanty, foetid discharge, which dries up and forms a crust covering the perforation. A cholesteatoma of the attic and antrum often is the cause of a continuance of the discharge. The pressure on the surrounding bony walls by the growing cholesteatoma may result in erosion and perforation of the bone, through which the invading pathogenic bacteria may attack the meninges and brain.

Cerebellar abscesses, as a rule, are secondary to necrosis of the petrous portion of the temporal bone, which is most often the result of suppurative labyrinthitis. Less frequently the route of infection is through an infected lateral sinus thrombosis.

The symptoms of brain abscess of otogenic origin necessarily vary according to the size and location of the abscess. Most of the cases come first under the care of their general physician. Among the symptoms complained of in the early stage may be anorexia, nausea, feeling of weakness and exhaustion, disturbances of digestion with consequent loss in bodily weight, and persistent headache. The latter is often localized in the par-

ieto-temporal region in temporal lobe abscess. Sometimes most of the pain is in the frontal region of the affected side.

Symptoms of the increased pressure in addition to headache are dizziness, vomiting, impairment of the memory, slow cerebration, disturbances of speech and sight and optic neuritis. In temporal lobe abscess there is often paralysis of the oculo-motor nerve.

In cerebellar abscess, paralysis of the abducens nerve frequently occurs. In cerebellar abscess there is vertigo, which is progressive with the increase in size of the abscess. There is nystagmus, which is usually horizontal and of wide excursions. The nystagmus is directed to the diseased side, and it also increases with the growth of the abscess. Ataxia is present, and there is a disturbance of the equilibrium with a tendency to fall to the diseased side. Choked disc, localized occipital headache, with tenderness and rigidity of the neck, are frequent symptoms.

In brain abscess early there may be convulsions of the hands and feet. Later, in cerebellar abscess homo-lateral paresis may occur, while in temporal lobe abscess the paresis is hetero-lateral. Central facial palsy may be present.

Bradycardia is present in both cerebral and cerebellar abscess, sometimes the pulse rate may fall to 35 per minute. There is apt to be a low degree of fever, with occasional periods of subnormal temperature. In the terminal stage, if meningitis supervenes, the temperature rises. There may be delirium, loss of consciousness, convulsions, paralysis, involuntary urination and defecation, coma and death.

As aids to diagnosis of the otitic complications of suppurative otitis media and mastoiditis, the following should be considered:

Blood examinations, examination of the static labyrinth and cochlear function, lumbar puncture, X-ray examination, and trans-illumination of the mastoid.

As to the conclusions from blood examinations, Dr. Sappington briefly summarized them as follows:

"The leucocyte count in suppurative mastoiditis and its complications follows the general rule of septic infection, viz., a leucocytosis high in proportion to the resistance of the patient.

"Blood examinations are especially valuable where the diagnosis is obscure. In severe infection, in addition to leucocytosis, there is a high percentage of polynuclear neutrophiles,

which ranges from seventy-three to ninety-eight per cent. The more severe the infection, and the greater the tissue destruction, the higher the percentage of polynuclear neutrophiles. Intracranial complications are marked by the highest percentage of polynuclear neutrophiles. If they are present in lower than seventy-seven per cent., there is probably no intra-cranial complication. If above eighty-six per cent., there is great probability of intracranial involvement. Sinus thrombosis produces a marked increase in the percentage of polynuclear neutrophiles—from eighty-six to ninety-seven per cent. Involvement of bony structures alone gives a lower polynuclear neutrophile percentage than where pus is present in the soft tissues.

"In children under 9, polynuclear neutrophile percentage is normally low. Fall in the total white count does not necessarily mean improvement unless accompanied by decline in polynuclear neutrophile percentage. A fall in the total leucocytes without decrease in polynuclear neutrophile percentage indicates failing resistance, and the advisability of immediate operation.

"In brain abscess, leucocytosis is moderate and seldom reaches 20,000. Suppurative meningitis of otitic origin usually runs a high leucocyte count, 20,000 to 60,000. In tubercular meningitis, leucocytosis is usually slight.

"In mastoid diseases, positive blood cultures are nearly always streptococcic, and indicate sinus thrombosis in the great majority of cases, if present after the patient has been operated on for mastoid disease. These bacteria usually disappear after the jugular is ligated."

Lumbar puncture is valuable both from a diagnostic and prognostic standpoint. By reducing the pressure within the spinal canal, ventricles, sub-dural and sub-arachnoid spaces, it is a valuable adjunct in the treatment.

In suppurative meningitis, lumbar puncture usually shows the cerebro-spinal liquor to be under increased pressure; it is cloudy; of grayish or yellowish color; it contains bacteria and pus cells, and is usually coagulable in six hours. Thirty per cent. of cases of sinus thrombosis have cloudy liquor on lumbar puncture.

If brain abscess has perforated into the intra-dural space or ventricles, there may be found cloudy liquor with micro-organisms. Cloudy liquor may also be present in extra-dural abscess and labyrinth suppuration.

The tests of the labyrinth and cochlea are too complicated and extensive for a paper of this nature. To those interested in this branch of otology, I recommend the book of "Labyrinth Papers" by Dr. G. W. Mackenzie. It covers the subject in every detail, and is as plain as such a complex subject can be made.

As to the value of X-rays as an aid to diagnosis in otology, Dr. James F. McKernon, in an article in the *Yale Medical Journal*, gives the following conclusions:

"Radiology is of more use in the chronic and obscure otitic conditions. Radiograms of a thrombosed sigmoid sinus in his experience show up very indistinctly unless there is pus present."

"These tests should in no way supplant the clinical evidence presented by the patient, but that in difficult and obscure cases their use may lead to an earlier accurate diagnosis, and thus the harmful and fatal delay in awaiting classical symptoms may be avoided."

From another paper published in *Annals of Otology, Rhinology and Laryngology*, September, 1913, entitled "Radiography as an Aid in the Diagnosis of Mastoid Disease," I quote the following:

"Radiograph of the mastoid will show: The size and extent of the mastoid cells; the presence of pathologic material; sometimes the presence of sclerosis; the presence of cholesteatoma, and the approximate size and position of the lateral sinus and emissary vein."

Mastoiditis is shown by the cloudy appearance of the cells, as compared with the normal side. In a mild condition, there is a slight haze over the cells, but the bony partitions are still intact. As the condition progresses, the haziness increases, light spots appear, which indicate a collection of pus or granulations. In a severe case, the haziness becomes a dense white blur with no partitions visible, the lateral sinus standing out clear; cholesteatoma shows as a dark area in the midst of white.

Transillumination may be used as a diagnostic aid in otology, just as it is in nasal accessory sinus disease. It presupposes a normal mastoid on the opposite side, and that both mastoids originally had the same structure. It shows the extent of the cells, and a hint as to the position of the sinus. In chronic cases it shows how far the sclerosis due to the suppuration pro-

cess has proceeded. It may show pus in the tip when the antrum is free from pus.

In concluding, I submit four points for your consideration. The observance of these will prevent most of the cases of extra and intra-cranial complications of otitic origin:

First.—To have in mind the possible existence of acute suppurative otitis media in young children who are ailing from an unrecognized cause.

Second.—The early and free incising of the membrana tympani in all cases of acute suppurative otitis media in which perforation has not already occurred.

Third.—The early opening of the mastoid, if suspicious that necrosis is beginning within.

Fourth.—Continuing to treat all cases of aural discharge, whether acute or chronic, until the suppuration has ceased. If local treatment fails to accomplish this, then the advisability of operative interference should be strongly considered.

DISCUSSION.

DR. GILBERT J. PALEN, Philadelphia: The subject of "Mastoid Disease and its Complications" is a very important one, and one that is now claiming the attention of the general practitioner far more than it did some years ago. The chronic cases especially require careful observation. The acute cases have a train of symptoms that lead finally to their diagnosis; but in the chronic cases, these complications come on very gradually, so that many patients are still walking around with severe symptoms, which are noticed only on careful objective and subjective observation. This fact is forcibly impressed upon one who does much operating in this line. Patients come to the hospital with brain abscess or meningitis, who have had few or no symptoms until a sudden collapse occurred, when the condition was discovered. The patient frequently complains of nothing but deafness and a foul-smelling aural discharge; but if you examine him carefully, objectively and subjectively, making blood examinations, etc., we shall find, in a certain percentage of the cases, that complications are already occurring. We can then bring them to operation early, and the patient will recover; whereas, if the condition is allowed to go on, complications develop that are, in the majority of cases, very serious.

Dr. Stickney has brought out one very important point; and that is that these complications take their direction according to the position of the anatomical structures of the mastoid and we are impressed with the variety of structure of the mastoid. In one case, the outer plate is thick; and in another, the inner plate. If we have a thin roof to the mastoid antrum, the pus takes a direction towards the cranial cavity. We cannot diagnose the anatomical structure of the mastoid before operation or know what direction the pus is taking, except from the clinical symptoms. If the symptoms are suspicious, it is safer to operate than to delay operation from day to day, waiting for the appearance of acute symptoms. The mastoid operation is not dangerous in skilful hands, and affords permanent relief. I should like to discuss these complications longer, but I know the time of the Society is limited.

RADIUM IN OPHTHALMIC PRACTICE.

BY

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As is the fate of all new therapeutic measures, the introduction of radium was received with extreme enthusiasm on the one hand, and with ultra-conservative skepticism on the other. This was chiefly on account of the claim of the first observers that radium was an apparent means of cure in certain malignant growths. Over its many fields of usefulness in other conditions there has been little controversy, and its position as an agent of the first importance in dermatology, and in the treatment of naevi and angiomas, is well established. Its use in internal medicine is as yet too brief to allow of any arbitrary statements, but it is reasonable to suppose from results already recorded that a distinct place awaits it in the treatment of many chronic disorders.

In some external diseases affecting the eyes and eyelids radium has been applied with some pleasing results. There has been very little written up to the present time on radium in ophthalmic practice; however, Dr. MacKenzie Davidson and Arnold Lawson have given us some excellent articles, and to them we are indebted for their reports on recent experiences.

In the application of radium to the eye, under all circumstances a local or general anaesthetic must be used, being careful to have all parts screened, the harder Beta and Gamma rays are allowed to act. It is often quite difficult to fix the apparatus (in the form of tubes). So it is best for the operator to hold it in position, being careful to have his fingers well protected by a wrapping of thick lead foil.

Short applications are desirable for fear of causing inflammatory reaction, although this has not been observed even when the stipulated time has been exceeded. It is said that slight transient pain sometimes follows, but it is never severe. A large proportion of patients experience no pain at all. In a case of rodent ulcer affecting the lid, Davidson found that a tube of 30 mg. of radium could be applied to the inner surface of the lid, and lie in contact with the sclerotic for half an hour, without producing the slightest ill effect. In general, the total dosage is regulated by the character of the lesion to be treated, so that "on exhibiting a tendency to spread or infiltrate surrounding tissues, or marked by any special virulence in its progress, would probably require a longer dose than a small superficial, or non-infiltrating lesion."

VERNAL CONJUNCTIVITIS—SPRING CATARRH.

This very chronic condition has been considered an almost incurable condition. In this disease some of the most striking results have been achieved. In this as many other diseases, the exact dosage cannot be stated, as we must be guided by the character of the lesion and the result of treatment. Five-minute applications of a capsule containing one centigram of radium bromid would be sufficient to begin with; this should hardly be repeated in less than one week. Davidson regards the action of radium in this condition as almost a specific. The scars produced are smooth and supple and do not tend to cause deformity from contraction of the cicatrix. They are very bloodless, however, and after cure the tarsal surface of the lid is quite blanched.

When the immediate discomfort, if present, has stopped, the patient's subjective symptoms, as a rule, are relieved, the action of the radium producing here, as in many other conditions, an anaesthesia of the parts.

CORNEAL ULCERS.

When stimulated by radium these heal much more rapidly than when not so treated. Lawson and Davidson established this fact, by reporting rapid cure in 16 out of 17 cases. It has also been shown to be of value in the treatment of interstitial keratitis, much less corneal opacity remains in case where it is used. It is reported to be of distinct benefit in case of recurrent keratitis profunda, and recurrent inflamed pterygium. Darrier, in France, reports its successful use in trachoma.

In malignant diseases it has a wide range of usefulness.

Where radium treatment can be had it is preferable to X-rays.

All observers report that where X-rays have previously been used the radium rays do not seem to exert their action so quickly and therefore healing is longer delayed. This can doubtless be explained by the fact that X-rays, not having the selective action for cancer cells that radium has, damage the normal as well as the pathological cell, so that proper reaction and healing do not so quickly take place ("Aikins"). This I have noticed to be undoubtedly true. Two cases of melano-sarcoma of the orbit: One had previously been treated with X-ray, while the other had not. The result was much more favorable in the case that had previously no X-ray treatments. The first case, Mr. N., age 64, consulted me July, 1912. Ophthalmoscopic examination revealed a small choroidal growth. I advised enucleation at once. The vision being good neither patient nor family seemed disposed to have the operation. Case reported again in October, 1912. Vision about gone and tension up to stony hardness; they again refused operation. I was again consulted July, 1913. By this time the globe had ruptured, and the growth was protruding about the size of a hickory nut.

Enucleation was performed and at the end of one month the stump seemed healthy and an artificial eye was fitted and worn with satisfaction for three months, when slight irritation was noticed and in one week patient had to stop wearing eye. I recommended X-ray treatment, but the growth advanced very rapidly. At this time radium was advised. I removed the growth which was crowding the capacity of the orbit and extending forward between the lids. It was thought advisable to remove the entire contents of the orbit before applying the radium. Fifty-five milligrammes were buried in the socket and

allowed to remain five hours. The eye was dressed daily and on the fourth day another treatment was given, allowing the radium to remain four hours. At the next dressing it was noticed that a large slough was forming and required daily dressings; the slough at this time (Aug. 20, 1914) has cleared up, leaving a healthy granulating surface. Case reported September 7, 1914, showing no signs of malignancy.

SARCOMATA.

Certain types of sarcomata are more readily influenced by radium than others. Small, round-celled sarcomata and the myeloid form are much more amenable than tumors of the spindle-celled variety.

Abbe reports a case of sarcoma of the lower eyelid—complete disappearance at the end of eight weeks

The growth should be removed when possible and a tube of radium inserted into the cavity, this may be left from 5 to 96 hours. When the growth cannot be removed it should be incised through the mass. It may be advisable to apply plaques externally and thus secure a "cross-fire" action. Some writers advise in a large mass to make other openings and plant tubes in order to get action from all directions. There may be considerable necrosis and consequently will discharge broken-down tissue for several days.

Following this there is a replacement of the malignant tissue by embryonic fibrous tissue, which finally leaves hard fibrous nodules in place of the neoplasm. There may be some systemic action during the necrotic stage, an elevation of temperature and acceleration of the pulse rate. This, however, clears up in a few days; it may be advisable to prescribe a saline drink of some kind.

The strictest antiseptic precautions must be carried out during the minor surgical procedures.

CONCERNING THE ADVISABILITY OF OPERATION IN PAN-OPHTHALMITIS.

BY

FRANK O. NAGLE, A. M., M. D., PHILADELPHIA.

THE great "Streit Frage" of the therapeutic measures in pan-ophthalmitis is not yet settled. To enucleate an eye-ball in an acute stage of pan-ophthalmitis still has the support of the old surgical adage, "Ubi Pus—Ibi Evacue." On the other hand, this operative procedure with an occasional death resulting therefrom has been and is still sounded as a warning by many ophthalmologists. As a result, substitute measures for enucleation were given us and in recent times there is a tendency to return to conservative therapeutics, which measures, however, are not exempt from meningitis with subsequent death.

Albert von Graefe, at the Heidelberg Ophthalmological Congress, in September, 1863, called attention to the danger of suppurative meningitis due to enucleation in the acute stage of pan-ophthalmitis. In reviewing the older literature, we find contra indication to enucleation in pan-ophthalmitis in the following textbooks:

Stellway von Carion in 1882, page 376,

Michel in his "Lehr Buche" in 1884, page 470, gives as a therapeutic hint incision of the sclera, and irrigation with antiseptic solution but does not mention enucleation. In 1899 Praun writes that meningitis after pan-ophthalmitis rarely occurs where conservative treatment is employed. Fuchs in his latest textbook and articles written by Enslin, Kuwahara and Oeller consider the conservative treatment as the rightful one. Where death does occur, these writers claim that operative procedures would not have prevented meningitis.

In Michel's "Yahres Bericht" for 1888 we find the first suggestion for enucleation given by Pannas and Martin—just seven years before the large statistical work of Rolland was reported,—in which eighty cases of enucleation were performed in the acute stage of pan-ophthalmitis. At that time, however, a transitional period occurred due to many ophthalmologists being frightened by the presence of at least thirty publications claiming death as a resultant of enucleation in pan-ophthalmitis. Among these publications are the following:

"Deutschman in von Graefe's Archives" 1885 reported 22 deaths and four cases of meningitis which finally recovered.

In 1886 Dor reported to the French Ophthalmological Society a series of cases of pan-ophthalmitis where death occurred due to enucleation. In 1891 Ramm, 1892, Kalt, and 1893 Risley reported cases of post operative meningitis and death, due to enucleation in the acute stages of pan-ophthalmitis. Becker in 1889 of the University Augenklinik, Heidelberg, collected the histories of forty-three cases of meningitis and death due to the above cause,

This was followed by favorable statistical reports by Stocker, Pflüger, Bauer and Haab supporting enucleation in pan-ophthalmitis. Stocker in the "Correspondence für Schweizer Ärzte" reports thirty-nine cases of enucleation in pan-ophthalmitis without any fatal results. Pflüger reports 53 favorable cases but recommended evisceration instead of enucleation. Bauer, in 1901, in an article written entitled "Die Enucleation bei Pan-ophthalmitis," reported 53 favorable cases from the Zurich eye clinic. It is interesting to note the claim made by Pflüger that evisceration could be used as a prophylaxis against sympathetic ophthalmia, but Zentmeyer, of the Wills Eye Hospital, has collected 15 cases of sympathetic ophthalmia following pan-ophthalmitis which were treated by evisceration. In the Archives "Für Augenheilkunde," 1905, is an article reporting 46 cases of pan-ophthalmitis at the Lemberg Eye Clinic between 1893 and 1904 treated in the regular routine way—enucleation. All cases were successful as far as any post-operative danger of meningitis. After this extensive review of the literature, we find in Wurdeman's "Injuries of the Eyes," textbook, 1912, page 119, the following:

The enucleation of an eye in the active stage of pan-ophthalmitis is not to be undertaken except where cellulitis with apparent pus formation in the orbit has occurred, in which after incisions have been made in the eye and orbit, the symptoms do not abate, otherwise pus germs may get into the opened lymph and blood channels of the orbital channels of the orbital tissues and be carried to the brain producing meningitis and death.

Concerning the pathology of pan-ophthalmitis, an elaborate article appeared in 1890 in the Archives "Für Augenheilkunde" written by Schobel. An examination of twenty-seven enuc-

leated bulbi was made microscopically. Schobel first differentiated pan-ophthalmitis and choroiditis purulenta. The terminal process of pan-ophthalmitis is a hypo-plastic one. The locality of the pus and exudate gradually turns into granulo-matous tissue. Finally, scar tissue and degeneration take place.

In 1903 Pollock described an unusual finding in the sclera which he found in fifteen cases of pan-ophthalmitis. With the ordinary haematoxylin eosin stain, an intense blue color appeared on the inner surface of the sclera. With Thiolin, this peculiar mucous reaction was more intense. Pollock considers this as the existence of a peculiar unknown mucoid substance in the sclera and considers it a specific finding for pan-ophthalmitis.

Bacteriological studies and examinations were undertaken by Delbanc, Hiroto, Silverschmidt, and Slateau. A specific infectious agent does not exist for pan-ophthalmitis. Strepto and staphylococci are mostly found, less frequently pneumococci. Pan-ophthalmitis appearing quickly after an injury is usually due to staphylococcic infection. Silverschmidt records a case of pan-ophthalmitis due to the bacillus subtilis. Although pan-ophthalmitis is usually due to traumatism, it is strange that tetanus as a complication is so rare—up to Oeller's case reported there were but eleven cases collected from the literature.

My personal experience with this subject has been as variable as the literature. My first year's training in ophthalmology in Uthhoff's clinic at the University of Breslau consisted in seeing all cases of pan-ophthalmitis treated by one routine method, namely, evisceration. The following year at the Fuch's clinic in Vienna I saw the conservative treatment for pan-ophthalmitis as the regular clinical routine. Since my return from Europe I have had several cases of pan-ophthalmitis and treated them either by the conservative treatment or evisceration.

My personal opinion on this subject was almost fixed until the last year and a half during which time I have had occasion to observe the routine work of Dr. Chas. LeFevre at the Mt. Sinai Hospital, Philadelphia. Dr. LeFevre employs the radical enucleation of an eyeball affected with pan-ophthalmitis. The specimen which I show you of one of the cases of pan-ophthalmitis only gives an idea of the pus formation which was present in vivo. This case was one of a penetrating wound of the cornea with prolapse of the iris. This case was brought to the receiving ward just as I was leaving the hos-

pital on Friday afternoon, January 15, 1914. The peculiarity of the case was the rapid development of pus formation. The very next morning Dr. LeFevre saw the case and the entire ocular contents was doomed to abscess formation. Staphylococcic infection had taken place. During preparation of the patient on the operating table pus actually squeezed itself out of the eye down upon the cheek. The whole orbit was in a state of brawny red swelling. In other words, a more ideal case of pan-ophthalmitis could not be found as far as exposing the patient to meningitis by early enucleation. The operative technique consisted of the ordinary enucleation of Miller. Argyrol 25 per cent. solution was injected subcutaneously in two or three places of the orbital contents.

THE HOSPITAL AS A TEACHING INSTITUTION.

BY

C. V. CLEMMER, M. D.

UNTIL within recent years hospital trustees felt that if they saw that the buildings under their control were kept well lighted and well ventilated; if they exercised a reasonable amount of care in the selection of their attending staffs, and saw that their patients received fairly good food, with proper nursing, they had fulfilled their mission.

The time has come when the board of the small hospital realizes that their duties and responsibilities are much greater; consequently numerous changes in hospital management have come about.

We may mention some of the changes which have taken place in our own hospital. During the past four years the students of Hahnemann College have enjoyed the greatest amount of clinical and laboratory training in its wards, laboratories and clinics. The institution has opened its doors freely to the student.

Noting the advantages the junior and senior student has today, by intimate association with his teachers and close following of his assigned cases, one can hardly realize a man going wrong at this stage. He is under constant supervision, and

a ready hand is always present to help him out of the difficult places.

The classes, of not more than forty men, are divided into sections of ten each, giving to each department, i. e., Medical, Surgical, Gynaecological and the specialties, ten men to work in each of these departments for a period of eight weeks, thus covering the thirty-two teaching weeks of the year.

If the case assigned be a medical one, the student takes a complete history; makes the necessary physical examinations, and all laboratory examinations. Each student has an assigned desk in the Hering Clinical Laboratory in the hospital, where he finds all necessary equipment to do routine laboratory work, urine, blood, faeces and gastric analyses; cultures, etc.

If the case be surgical, gynaecological, obstetrical or one of the other specialties, the same diligence is carried out in assisting with the operation, the delivery, the administration of the anaesthetic, the microscope examination of specimens procured, and finally following the case until the date of its discharge from the hospital.

It is only within recent years that medical schools have recognized the training of students at the bedside, and to-day we occasionally hear of cases where individuals persist that medical students should not be given free access to the wards of the hospital, while in reality, if they knew how pleased the patients are to have the young doctor inquire so closely into their conditions, they would consider them a help.

Another important matter relates to the interne staff: Since our Bureau of Education and Licensure has taken "the bull by the horns," and declared that after January 1, 1914, candidates for licensure to practice in this State must have had one year's experience as an interne in an approved hospital, or in lieu thereof, a year of approved post-graduate study, we readily see that the hospital has still another impetus.

Further, the Council on Medical Education of the American Medical Association is going to classify and decide on the merits of individual hospitals as the medical schools have been classified, and submit a list of approved hospitals at which candidates can spend their interne year. The Bureau of Education and Licensure of this State has already started this work.

Hospitals that offer little or no clinical opportunities to their internes will be rapidly eliminated. The rapidly increasing number of hospitals in comparison with the decrease in num-

ber of graduates, will bring the coming interne to the institutions offering the most experience, with the better teaching staff.

The public has its attention called to the necessity of hospital trained doctors.

The ambitious young doctor is to-day clamoring for hospital training. He has had a taste in his under-graduate experience, and this has taught him that he is not qualified to launch out unless his college work is supplemented with a year or two of clinical training as a hospital interne. Further, he should exercise as much care in selecting his hospital as in selecting his medical school.

In addition to educating doctors and nurses, hospitals are rapidly educating the public. We no longer hear expressions of fear regarding the hospital from the less intelligent, and these are the people who are adding to their knowledge of disease and of hygiene.

EMPHYEMA THORACIS IN CHILDREN.—It should be a cardinal rule as soon as we recognize the presence of pus in the pleural cavity, it should be evacuated at the earliest opportunity. Success in treatment depends largely upon its early removal, and if we can secure good drainage and keep the cavity free from sepsis, the risks of complications occurring are greatly diminished. I believe that the earlier the evacuation of the chest takes place the less chance is there of the development of purulent pericarditis and meningitis, which I consider are in the main due to the long continuance of pus in the pleural cavity. In most cases any attempt to relieve the effusion by aspiration is a dangerous waste of time, and is by no means an efficient method of treatment, but there are exceptions to this rule. In cases where the exploring syringes has drawn off turbid serum—by which I mean serum charged with pus cells—I have frequently aspirated with excellent results. Then, again, it should be tried in very young infants who are unable to stand a serious operation. Aspiration is also useful when the effusion is very large. It may in such cases be had recourse to on the day previous to incision, so as to avoid the danger of syncope due to the sudden evacuation of a large quantity of fluid. In small localized collections of pus it is also recommended, but I have had no experience in such cases. The objections to aspiration are that by this means we cannot remove all the pus, that large masses of fibrin are left; we get no drainage, and have generally to resort to other measures later. As a rule our choice lies between resection of a portion of rib and simple incision of the pleura, and there are points in favor of each method. By the excision of a portion of rib we undoubtedly get better drainage and less risk of sepsis, but, on the other hand, it is a more serious operation, takes longer time, and causes greater shock. Incision of the pleura is a very simple and easily performed operation, is followed by little shock, and the drainage is usually sufficient.—H. G. M. DUNLOP in the *Edinburgh Medical Journal*.

EDITORIAL

THE CONTROL OF FEVER IN PULMONARY TUBERCULOSIS.

ONE of the most discouraging features that the physician has to contend with in cases of active pulmonary tuberculosis is the persistent rise of temperature, one or more degrees above the normal, each afternoon or evening.

Although fever in itself may, in a certain sense, be regarded as a beneficial reaction to toxins, yet it is essential to therapeutic success that the production of these toxins and the fever resulting from them should be controlled as soon as possible.

Of the various methods of attacking fever, the most effective, in the average case, is rest. By this of course is meant rest in bed, as long as the daily rise exceeds 100° . It has been found by practical experience that about fifty per cent. of tuberculosis cases lose their temperature after five or six weeks of rest in bed. If there is a febrile rise of more than 100° daily after six weeks of rest, the doctor should realize that he is dealing with an obstinate and difficult case.

During recent years it has been found of advantage in selective cases to put one lung at rest by the production of artificial pneumothorax. This is induced by injecting nitrogen gas into the diseased side until collapse of the lung takes place. Where the other lung is not affected, complete collapse of the affected side usually reduces the temperature to normal and markedly ameliorates the cough.

Many investigators have been led to use vaccines for the purpose of controlling the fever due to mixed infection. So far vaccines made from the sputum of the tuberculous patients have not proven successful. Hudson reports four hundred such cases treated with autogenous vaccines and, while a few were somewhat improved, fully eighty per cent. showed no favorable response to the treatment. Tuberculin as a rule, is of little value in febrile cases. However, its cautious use in extremely small doses has sometimes been beneficial.

As to the medical treatment of fever in tuberculous indi-

viduals, it requires but little investigation to convince one that dynamically acting remedies selected in accordance with the principle of *similia* constitute the most effective medicinal treatment. The homœopathic thereapeutist has a number of valuable agents at his command for such cases, notably *tuberculinum*, *hepar sulph.*, *mercurius*, *phosphorus*, *baptisia*, etc.

The use of coal tar products to control such a fever is the height of folly, the temporary reduction in temperature induced being more than offset by the injurious effects of these drugs on the heart, the circulation and the composition of the blood.

In summarizing then, it may be said that the physician who wishes to do the very best that modern therapeutics offers to control fever in a tuberculous patient, should consider chiefly the employment of rest in bed, fresh air, liberal diet and a carefully selected homœopathic remedy. As an adjuvant, artificial pneumothorax and vaccines occasionally may be of assistance.

G. H. W.

"CHRISTIAN SCIENCE" A MENACE TO PUBLIC HEALTH.

THE United States is noted as being a country in which the highest degree of toleration is accorded all sorts of unusual ideas and practices in social and political affairs and especially in the sphere of religion. It is not to be wondered at, therefore, that the species of systematic self-delusion erroneously called "Christian Science," has been allowed to take its course practically without objection or hindrance up to the present time.

At first, these deluded fanatics were merely laughed at, and the wiser ones among us seemed fully confident that the high standard of education among our people would so influence the judgment of the masses as to lead them to reject the fallacies of this nonsensical system of pseudo religion and pseudo medicine. As a matter of fact, however, we find a gradual increase in the number of professed believers in this system and its more or less widespread acceptance is a lamentable commentary on the failure of the American system of education to develop the powers of judgment and of discrimination. This fact becomes all the more evident when we realize that the largest number of adherents of this sect are enrolled in the New England States, in which education is generally conceded to have attained its highest development.

It is not our intention at this time to enter into any analytical discussion of the ideas advanced by the leaders of the so-called "Christian Science" movement, with their strange commingling of well known facts and principles with ludicrous and fantastic hypotheses, as no individual with a well balanced mind is likely to be misled by them, and those who have been misled are incapable of being convinced of the folly of their ways by any array of facts or of arguments that could possibly be presented. Our present purpose is more to call attention to the fact that the time is fast approaching when the matter can no longer be looked upon in a light or humorous manner on the part of the profession or public, but serious consideration will have to be given to measures to protect the lives and health of children and of those who are compelled to live in the same community with the adherents of this sect.

The matter has recently been brought forcibly to the attention of the profession and of the public in the City of Philadelphia by the death of a child treated by the so-called "Christian Science" methods. A physician who was called at the last moment, we presume for the purpose of insuring a legal death certificate, found the child in a dying condition and immediately notified the Coroner who caused the arrest of the so-called healer and also of the parents of the child. Investigation showed that no attempt had been made to quarantine the child or to prevent the transmission of the disease to other persons. As far as we are aware at this time, no cases have been traced to this source of infection, but as far as the efforts of the healer and of the family were concerned, everybody in the neighborhood might have been infected with the disease. This of course, is only one instance out of many, as there is hardly any community in our country in which the same scene is not being enacted with increasing frequency.

As Americans we are prone to admit the principle that the individual has the right to receive such treatment for his ailments as he may desire. We cannot however, be indifferent to the sufferings and death of innocent children who have neither the intelligence nor the power to protect themselves against procedures that not only entail agonizing sufferings but which deprive them of the life saving methods of modern science. It should also be strongly emphasized that while the individual has the right to employ such methods of treatment as he may

deem preferable in dealing with his own ailments, it is likewise true that he has no right to endanger the health and life of the members of the community in which he lives. The individual suffering from small-pox or from diphtheria or any other contagious malady, who adhering to the tenets of the so-called "Christian Science Church," fails to observe those precautions against contagion to others that science and experience have demonstrated to be necessary, is committing an act detrimental to the public welfare and one that endangers the life of every individual in his community.

Sooner or later this fact will have to be recognized and the followers of this fanatical sect will have to be dealt with in accordance with the dictates of reason and of experience. It is no part of the doctor's duty to persecute or to make martyrs of the unfortunate dupes of this fantastic system, but it is our privilege and should be our duty as physicians to speak boldly in behalf of unprotected children and in behalf of the healthy members of the community who are endangered by the practices of the "healers" and their followers. G. H. W.

A HOMŒOPATHIC HOSPITAL FOR SICK SOLDIERS.

THE members of the Homœopathic profession in England are making an earnest effort to establish a homœopathic hospital in France where sick soldiers of all nationalities may receive the advantage of homœopathic treatment for medical diseases.

An ideal building located in an especially favorable locality for receiving and caring for sick soldiers has been obtained for this purpose and it is estimated that about 25,000 will have to be raised to insure the success of the plant. In the News and Advertisers section of the present issue of the *HAHNEMANNIAN MONTHLY*, a more detailed description of the plans and purpose of this institution is set forth by Dr. George Burford, Vice-President of the International Homœopathic Council. It is earnestly hoped that American homœopaths will be disposed to contribute to this very worthy cause and we would ask that each of our readers give careful consideration to Dr. Burford's appeal.

GLEANINGS

DIAGNOSIS AND TREATMENT OF PARENCHYMATOUS SYPHILIS, by F. W. MOTT.—Citing others who have found spirochetes in the brain of patients dying from general paralysis, Mott records his own findings of positive results in thirty-six per cent. of 100 brains examined. He suggests that in this form of syphilitic infection symptoms are caused by spirochetes, which are multiplied locally with liberation of toxins and the development of a congestive reaction. Unilateral seizures are indicative of the location of the brain focus; Mott has noted post mortem that the more severely affected portions are smaller than the rest of the brain. The organisms are not diffusely present, but are localized in small foci. The spirochetes can be isolated in a motile state from the brains of living subjects, or post mortem, attempts at infecting animals with them have failed. In tabes, spirochetes are not present to any extent in the tissues of the spinal cord, the lesion is probably caused by their toxins passing along lymph channels. Tabes and general paralysis have a decidedly different pathogenesis. The inflammatory reaction which occurs about the foci of the organisms in the brain in general paralysis leads to antibody production and destruction of some of the organisms with a recession of the symptoms. The residual destruction of the nervous tissues leaves its stamp. Some of the organisms resist the action of the antibodies and later multiply with a recrudescence of symptoms and a greater residual damage after each partial recovery. From clinical and experimental observations, it seems that mercury does not directly destroy the spirochetes, but rather that it stimulates the powers of resistance of the host. On the other hand, the organic arsenicals probably attack and destroy the accessible organisms directly. Combined arsenical and mercurial treatment finds its rational basis in this dual action on the spirochetes. In parenchymatous syphilis of the nervous system, the Wassermann reaction is the one trustworthy guide aside from the clinical symptoms, The intensity of this reaction also gives some index to the activity of spirochetes. Owing to the foci of spirochetes and impenetrability of the arachnoid to drugs and antibodies, it is hardly to be expected that general paralysis will yield to efforts at treatment; it is the opinion of the author that no means of treatment yet adopted has any effect on the localized collections of spirochetes. On the contrary, treatment is not infrequently provocative of damage. With tabes the case is different, for the destruction of the foci of organisms which are sending toxins to the tissues of the cord may lead to the checking of the disease at the point at which treatment was instituted.—*British Med. Journal*.

TREATMENT OF DIABETES, by FREDERICK M. ALLEN.—The first step is to fast until glycosuria ceases, and for twenty-four to forty-eight hours longer. At the same time the ketonuria falls steeply, quickly approximating normal, and then the aim is to keep it down to this level. Plain fasting suffices for the purpose, but since alcohol is a food which does not produce glycosuria and is said to diminish ketonuria, it is generally given during fasting, especially if there is danger of coma. Its use later depends on individual conditions. Alkaloids may be useful for the first few days if coma seems imminent, but are then no longer needed. The next step is to feed very slowly and cautiously, individualizing the diet. The one requirement is that the patient must remain free from both glycosuria and acidosis. Any trace of sugar is the signal for a fast day, with or without alcohol. The things to be considered in the diet are carbohydrate, protein, fat, and bulk. Frequently the first thing given after the fast is carbohydrate, 200 grams of vegetables of the five and six per cent. classes, increased day by day until a trace of glycosuria appears, which is checked by a fast day; thus we learn the carbohydrate tolerance and clear up the last trace of acidosis. After this protein is given, an egg or two the first day and nothing else. More protein, eggs or meat, is added day by day until the patient shows glycosuria or reaches a safe protein ration. The purpose is to learn the protein tolerance and to cover protein loss as quickly as possible. Fat is somewhat less urgently needed, except in very weak and emaciated patients, and can be added gradually as conditions seem to indicate. An element of bulk is necessary to give the comfortable feeling of fullness and to prevent constipation. This is the great advantage of green vegetables, which may be fed raw or cooked. When even these cannot be tolerated they may be boiled through three waters, throwing away all the water, thus removing nearly all the starch, and the patients generally take these thrice cooked vegetables gladly, without glycosuria. One result of this program is a loss of weight, but this seems to be beneficial. In subsequent treatment, the patient is welcome to gain weight up to a certain point if he can do so without glycosuria or acidosis, but any attempt to build him up with any kind or quantity of food beyond what he is able to metabolize perfectly seems to hasten a fatal result. This plan of treatment is the one now in use at the hospital of the Rockefeller Institute.—*N. Y. Med. Journal.*

THE TREATMENT OF RIGG'S DISEASE.—The technique of examining for the amebæ is very simple. (C. C. Bass, and F. M. Johns, *New Orleans Medical and Surgical Journal*, November, 1914.) Remember that they are most numerous in the bottom of the lesion. A little material is removed with a suitable instrument (a good toothpick serves the purpose well), diluted on a slide with a little salt solution, saliva (patient's) or water. A cover glass is placed on the diluted material, which should be examined promptly with the high dry lens of the ordinary microscope. By careful search amebæ are found, showing the characteristic ameboid motion. The amebæ vary in size from about that of a leucocyte to about three or four times this size. No contractile vacuole is recognized, but nutritive particles, more refractile and more prominent in appearance, are observed. The ectosarc is quite clear and is well differentiated from the endosarc.

These amebæ are easily demonstrated in stained specimens. A good method is to make a thin spread of the scrapings and pus from the bottom of the lesion on a slide, allow to air dry, fix with heat and stain with carbol-fuchsin about one-fourth minute, wash, stain with Loeffler's methylene blue about one-half minute, wash, dry, and examine. The amebæ are well stained by this method, and show their inclusions of tissue or cell remains, indicating pathogenicity. They have been unable to demonstrate that these amebæ take up bacteria, though they sometimes appear to do so.

The action of emetine in amebic dysentery is very prompt, striking and specific. Usually the entameba cannot be found in the discharges after twenty-four to forty-eight hours of treatment, and the bloody mucous stools give place to normal formed stools in three or four days. There is considerable tendency to relapse after the treatment has been discontinued for a time, but no doubt a considerable number of "relapses" are, in fact, re-infections.

Whenever a patient has advanced Rigg's disease in one or more teeth the disease also exists around and between many of the other teeth. The inter-dental tissue is often soft, spongy, and bleeds readily. Often simply sucking the teeth causes bleeding. Careful examination reveals active motile amebæ present.

The doses of emetine experimented with have been from one-half to one grain. Only one dose was given in a day. Several cases have been given a dose daily for several days. Others were given one or more doses until the amebæ disappeared, after which an interval was allowed to determine how long it would be before they would return, or what other results could be observed. In several instances no amebæ could be found the next day after emetine had been given on two successive days. In no case have we been able to find amebæ the next day after emetine had been given on three successive days.

On account of the wide distribution of this amebæ in nature and the character of the lesions of the disease, they do not think it very likely that bad cases of pyorrhea alveolaris will be permanently disinfected by a few doses of emetine given during a few days. The chances of reinfection are so great and the damaged gum, alveolar and tooth structure offer such favorable soil that it must surely be necessary to continue the specific treatment until Nature has had time to fully heal the disease. The length of time necessary for this will no doubt depend upon many factors. Healing and repair of diseased bone is always slow. Whenever the disease involves only the gum, and has not reached the bone (alveolar structure), the length of time necessary for the gum to heal will probably not exceed a week.

THE SMALL MEDICAL SCHOOLS are filling a social need and will probably exist as long as there is a demand for them—and that may be permanently. They are not turning out highly skilled specialists nor is that their purpose. They are training self-reliant men to work in isolated country districts. To be sure, this kind of practice is itself a specialty for it requires knowledge and skill in methods wholly unnecessary in the city where we can get professional help in a minute or two. We hear rumors that the large

medical schools are adopting a policy which has as its object the increase of their own student body by driving the small schools out of existence. If this policy does exist, it had better be abandoned at once. We are learning of the failure in practice of graduates of the big institutions and there is a suspicion that they have been given too much theory and too little training in the practical work they are to follow. We even hear some doubt expressed as to whether full time professors who never enter a private house except rarely as consultants, are competent to tell a man how to succeed in private practice where one has not the help of a big hospital staff of specialists and laboratory assistants. The old style school had practitioners to teach practice, and they also knew how much of the basic studies we needed. Would it not be well to go a bit slow in the development of big schools in which the successful practitioners are less and less in evidence and the laboratories waste so much time? We are also reading more and more complaint of the difficulty of country communities to obtain doctors, and the blame is being laid on the big schools which are placing such a glamor over city practice that few students are willing to bury themselves in the country. The remuneration of country practice is said to be too small to warrant the expense of a course in the big cities, but if there is a small local school the surrounding country is well supplied by young, enthusiastic, successful practitioners. Although a small school is designed to train practitioners only, it must not be imagined for a minute that its graduates are not scientific. Indeed their qualifications and success are inducing many a doctor to advise students to seek the small schools. Limited clinical facilities may be a blessing, because the student is induced to investigate each case more thoroughly. He who has so many cases to see that he sees none, is cursed by a big clinic. If examining boards are to refuse recognition to a graduate because his hospital had only 100 beds instead of 300, they are quite likely to hear from an outraged public and profession.—*Amer. Medicine*.

THE SUCCESSFUL USE OF EMETINE IN PYORRHEA ALVEOLARIS reveals an unexpected power of this wonderful substance. According to the *Dental Cosmos* of August, 1914, p. 948, Dr. M. T. Barrett of the Dental Department of the University of Pennsylvania, and Dr. Allen J. Smith, Professor of Pathology, have succeeded in demonstrating *amebae coli* in certain cases which defied ordinary treatment, and curing the disease with local injections of emetine. Vaccine treatment has not always lived up to its early promise and more than one observer has thought the failures due to the fact that a protozoan and not a bacterium was the cause of the disease. Whether or not the surmise is correct, the cases have required prolonged local surgical measures and germicides, but have yielded very promptly to emetine. It is quite likely that there are other infective agents besides *amebae coli* and that emetine is lethal to these. If *amebae coli* are the causes, it may be possible to cure the cases by the hypodermic administration of emetine. The reports so far are so extremely favorable that we are justified in predicting a decided advance in public health through the prompt cure of oral infections which are blamed for an enormous amount of chronic invalidism now due to the absorption of buccal toxins and also due to secondary infection of the whole alimentary tract. The uses of

emetine are becoming so numerous that the wonder grows it was not discovered sooner. Still more amazing were the accurate observations of our medical ancestors who had been using the crude drug, with truly scientific empiricism. The time has now come in which we must adopt a more humble attitude towards the therapy of the last century, instead of the flippant contempt which was part and parcel of the therapeutic nihilism we all more or less approved after the discovery of the living causes of infections. The old results in the case of ipecac were not *post hoc* but really *propter hoc*, and perhaps many other drugs acted similarly though we have discarded them. The text books of a century ago have thus suddenly become of practical value instead of purely historical. They are really gold mines and it is our duty to extract the gold from the enormous amount of impurities which conceal it.—*Amer. Medicine*.

PYORRHOEA DENTALIS ET ALVEOLARIS; SPECIFIC CAUSE AND TREATMENT, by C. C. BASS and F. M. JOHNS.—This disease is practically universal (all people having it sooner or later); it leads to loss of teeth by a long suppurative process, begins in adult life, or earlier, affects primarily the dental and alveolar periosteum; whenever the periosteum is destroyed, ulceration of the soft tissue attached to it, of course, occurs. Such ulceration includes granulation, pus formation, and the usual tendency to bleed easily. The specific cause is *Entameba buccalis* (possibly other species also), which infects and destroys the peridental membrane, and the pyorrhea results largely from the secondary infection. It is not at all probable that entamebas can attack the normal tissue; damaged tissue seems necessary, and injury should furnish a kind of pocket or closed ulcer. The demonstrable entamebas may be destroyed by means of half a grain of emetine hydrochloride hypodermically for from three to six successive days. After the destruction of the amebas there are still lesions which will require days, weeks, or months to heal. The specific treatment must be repeated from time to time until these lesions have healed; reinfection and relapse are likely to occur. Injection of ipecac or emetine into the worst lesions ought to be of service. Rinsing the mouth thoroughly with a solution of fluidextract of ipecac is believed to protect, to some extent, against reinfection, and in some instances this actually cures the disease in its earliest stage.—*Journal of the American Medical Association*.

THE INTOXICATION IMPULSE, by ALEXANDER LAMBERT.—The problems are those of poisoned body and mind which must be treated medicinally and physically unpoisoned. When this is accomplished, there remain the problems of psychology; in the vast majority of cases we are dealing with sick, mis-understood personalities, distorted through many causes. Often there is an economic situation to be corrected, almost always a psychological distortion, a social readjustment that has to take place. Medicinal treatment consists in the hourly administration of a mixture of belladonna, hyoscyamus, and xanthoxylum, and at stated intervals vigorous catharsis with some form of mercurial purge. The mixture is increased or diminished as the patient shows symptoms of the full physiological effect of the belladonna. He is not cut off suddenly from his drug or alcohol, which is given at definite intervals in diminishing amount, until

withdrawn altogether. He is also stimulated with various cardiac remedies as occasion may require. This treatment is usually kept up for fifty-six to eighty hours, when a dose of castor oil is finally given; the time for the use of the oil being when the patient is passing green bile. It is necessary thoroughly to eliminate these poisons. Free catharsis gets rid of the poisons at the same time belladonna and hyoscyamus, acting on the nerve endings of the secretory nerves, prevent the excess of action of these nerves following the withdrawal of the habitual narcotic drug.—*Medical Record*.

THE SUN-TREATMENT OF TUBERCULOSIS of the foot as carried out in Rollier's clinic is summarized by Leuba (*Deuts. Zeit. f. Chir.*, 1913, cxxv). The affected foot is placed on an even surface, so inclined that the foot is higher than the pelvis. The sinuses are exposed to the sun without any dressing, and to the free air in the absence of sunshine. No injections nor operations are employed. When healing is obtained, as demonstrated by the X-rays, the patient returns to his home and for at least a year wears an apparatus by means of which the patient places no weight on the recently healed foot. The combination of the fresh air and the sun-bath produces a return of strength in the whole organism, which is essential for the cure of surgical tuberculosis. The fever usually falls rapidly, the appetite increases, digestion regulates itself, and the respiratory capacity is improved. Locally, the pain disappears and the swelling and contractures are much relieved; fistulae and granulative tissue gradually diminish and sequestra are separated. Tuberculous joint affections exposed to the sun heal without atrophy and often without ankylosis.—*Med. Review of Reviews*.

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS.—In the *Boston Medical and Surgical Journal* of September 17, 1914, CHADWICK says that the results obtained by this treatment depend upon whether the diseased area of the lung can be partially or wholly collapsed. When there are tough adhesions, a marked thickening of the pleura, or a fibroid lung, effective pneumothorax cannot be produced, and as the respiratory conditions will be very little changed a marked result cannot be expected. Whether suitable conditions exist only a trial will determine, as some old-standing cases are unexpectedly benefited.

A patient in any stage of disease, if a unilateral case, should have the benefit of an induced artificial pneumothorax if he does not show marked improvement under good sanatorium conditions in a reasonable period of time. Careful selections may be made from the bilateral cases which are not improving, if in one lung the disease is apparently inactive. The benefits frequently noted are lessened cough and sputum, lower temperature, and slower pulse-rate. The patients often express themselves as feeling less tired and more energetic. They are able to sleep better because they cough less at night. Lessened absorption of toxins probably accounts for the improvement in their general condition.

The writer has not had experience in treating first-stage cases with artificial pneumothorax, as Murphy has recommended. Cases of that class usually respond well to sanatorium treatment. If, however, a patient

proved to be a progressive case, although it was at an early stage, the writer would advocate induced pneumothorax without much delay.

In the writer's opinion it is a method of treatment of much value in carefully selected cases, but it should be given only to such patients as can be kept under close observation and under sanatorium conditions.

THE PATHOGENESIS AND SYMPTOMATOLOGY OF SYPHILITIC AORTITIS.—The *Albany Medical Annals* for August, 1914, contains an article by BLUMER on this topic. He well says that the course and prognosis of syphilitic aortitis depend in the main on the early recognition of the disease, and at the present time the writer is not in a position to recognize the condition in its early stages because it is usually symptomatically latent. If patients who have had syphilis would make it a rule to submit themselves to periodical examinations, including a Wassermann reaction, the problem of prognosis in syphilitic aortitis, as in other forms of late syphilis, would be decidedly simplified. Needless to say, malignant types of syphilis in which the aorta is attacked give a poorer prognosis than the benign forms. The extent of the damage which has been done before the disease is recognized is also a prognostic factor of importance. Usually, with our present methods of recognition, the disease runs a fatal course in from one to one and one-half years from the development of the symptoms.

The causes of death in these patients are general anginal attacks, rupture of an aneurism, or cardiac decompensation. Occasionally patients are carried off by other forms of syphilis. Naturally some die of other diseases—tuberculosis, carcinoma, or colitis. In a number of instances suicide has been a cause of death.

Keeping in mind that syphilitic aortitis is a manifestation of active syphilis, and not a parasymphilitic disease, the treatment becomes obvious. The patient should be placed upon active antisymphilitic measures. While mercury and the iodides have been used with some measure of success, it is perhaps best to rely primarily upon salvarsan on account of the rapidity and efficiency of that remedy. Ehrlich's original advice to avoid the use of salvarsan in patients with severe cardiac and vascular lesions has been quite widely disregarded, and usually without untoward results. It is true that occasional fatalities have occurred, but inasmuch as the disease is one that of itself practically always proves fatal unless checked, it is justifiable to take the risk of placing these patients upon active salvarsan treatment.

TREATMENT OF PERITONITIS.—GREKOW (*Beiträge zur klinischen Chirurgie*, Bd. 89, Heft. 2-3, 1914), reporting upon an extensive experience with peritonitis at the Obuchow Hospital in St. Petersburg, divides peritonitis into the dry, or septic, and the purulent or fibrinopurulent varieties; the latter may be of the early, the late, or the terminal stage. The dry, or septic, form is characterized by no or at least very slight serous or serofibrinous exudate, but with marked injection and distention of the intestines and with rapid pulse, frequently with icterus and with very high or even subnormal temperature; rigidity and pain may be slight. Purulent peritonitis in the early stage shows purulent or seropurulent exudate often in large quantity, with slight odor, and with only moderate injection

and distention of the intestines. In the late stage the exudate is thicker and of putrid odor; the intestines are distended and adherent. In the terminal cases the patient is in very bad general condition, with all the classical signs of peritonitis. The exudate is localized by adhesions in various areas, the intestines are distended and edematous. The early stage is comprised in the first one to two days; the late stage in the third to the fifth day; and the terminal stage in the sixth to the twenty-first day. The cases reported are subdivided as follows, according to their origin and results of treatment: Of cases resulting from appendicitis there were 101, with 59 cured; from gynecological conditions, 43, with 23 cured; from parturition or abortion, 13, with 2 cured; from the gall-bladder or pancreas, 18, with 9 cured; from typhoid perforation, 18, with 2 cured; from injuries to the stomach or intestines, 14, with 9 cured; from phlegmonous enteritis 3 cases, all of which were fatal. There were 12 non-operative cases, of which all died.

There is no doubt that in peritonitis resulting from gynecological conditions, cholecystitis, or perforated gastric ulcer, it is proper to carry out expectant treatment pending localization and abscess formation, but generalized peritonitis is, as a rule, under palliative treatment, a fatal disease. In these cases palliative treatment is to be considered only when the patient is moribund or obstinately refuses operation, or when it is impossible to properly prepare for operation, as in case of war. The general plan of palliative treatment implies absolute rest, morphine subcutaneously, no nourishment by mouth, nutritive enemata, ice to abdomen; in case of vomiting irrigation of the stomach and common salt infusion. By way of preparation for operation, especially in the later stages, the stomach is washed out, particularly with a view to preventing aspiration pneumonia, also to lessen the burden on the heart and lungs. If the pulse is weak, an intravenous injection of saline solution, also camphor, digalen, or caffeine, is given. General anesthesia is desirable; local anesthesia is insufficient and increases the tendency to shock. Lumbar anesthesia has no special value. Disinfection of the operative field is done by means of iodine. In all uncertain cases the incision is made in the midline, and if this incision does not suffice, a second incision is made over the site of the trouble. In case of marked distention of the intestines primary enterostomy or puncture should be done, as it has a favorable influence upon the parietic condition of the intestines and favors their return to the abdomen. In all cases the cause of the infection is to be removed if possible. In typhoid perforation the opening can be made to serve as a fecal fistula. In perforating ulcer of the pylorus or duodenum primary gastroenterostomy is to be done; in localization of the ulcer in other parts of the stomach or in general weakness of the patient one must be content with tamponade of the omentum, duodenostomy, or jejunostomy.

THE STATUS OF THE TONSIL.—In this issue of the *Therapeutic Gazette* we are glad to be able to publish four papers which we think fairly represent the attitude which should be taken by the general practitioner and specialist in regard to tonsillotomy or tonsillectomy. Several times during the last two or three years we have called attention to the fad of extirpating the tonsils, and it will be recalled that we quoted with

approval a vigorous article by Dr. Mackenzie, of Baltimore, entitled "The Massacre of the Tonsils."

In the discussion of the four papers which appear in this issue of the *Therapeutic Gazette* the writer of this article stated that, so far as the general practitioner was concerned, he thought it desirable that definite statements should be made, by those competent to make them, as to the kind or type of tonsil which should be subjected to operative measures. Manifestly the type which must be attacked is that in which the follicles of the tonsil are continuously infected, producing not only local inflammatory change, but possibly also inducing more or less systemic infection. These tonsils are not necessarily greatly enlarged. Sometimes they are so hidden behind the half-arches as not to be readily seen, except upon skilful examination. They demand attention even when small and hidden, whereas the large fibroid tonsil, which often projects even to the uvula, but which has few, if any, enlarged follicles, and is often somewhat paler than the surrounding mucous membrane, may be left *in situ* without disadvantage, unless both tonsils are so affected that by mechanical obstruction they interfere with swallowing and proper breathing, particularly if the nasopharyngeal adenoids are diseased. Such tonsils are then an associated evil, but one such tonsil without diseased nasopharyngeal adenoids often causes no trouble whatever, and ultimately, with the child's adolescence, undergoes atrophy and ceases to be in any way a factor worthy of consideration. So, too, when the tonsil shows numerous ragged edges resulting, possibly, from previous attacks of inflammation with secondary overgrowth of connective tissue and without chronic infection, these glands need not be attacked.

Again, it would appear that it is not necessary in all cases when removing nasopharyngeal adenoids to simultaneously remove the tonsils as well, since oftentimes this operation is severe and is not absolutely devoid of danger; it materially prolongs the period of operation, and may be followed by grave hemorrhage, or be accompanied by anesthetic accident. We think, too, that the point made by Dr. Makuen in regard to damage to the pharyngeal muscles and half-arches is not given the consideration which it deserves by the general practitioner or by the specialist, and it is worthy of note that in these papers, and in the discussion which followed their reading, it seemed to be the consensus of opinion that operations upon the tonsils of children under five years of age are not advisable, except under extraordinary conditions. In other words, as we have already pointed out, these four papers, representing the views of men who are especially engaged in this line of work, breathe an atmosphere of safe conservatism which deserves attention. In no instance is the attitude taken that the tonsil, with certain conditions present, ought not to be treated by operation, yet the common view that all large tonsils ought to be taken out is strongly condemned.

That there is a "massacre of the tonsils" going on is shown by a statement made during the discussion of these papers that on visiting an institution in a city other than Philadelphia, the speaker was surprised to learn that "tonsillotomy operations were booked three weeks ahead."

In the *New York Medical Journal* of December 5, 1914, French writes upon the topic of tonsillotomy versus tonsillectomy and strongly advocates

the careful examination of a piece of tonsil removed by forceps before determining the character of the operation which is to be proceeded with. Concerning enlarged tonsils in adults, he says that in those which have failed to undergo retrograde metamorphosis we are often able to effect the most satisfactory impression upon secondary infections by clearing out the crypts and applying local medical treatment although, unhappily, such methods "are rarely possible in young children for the age of reason has not yet begun." He further states that if the tonsils of children are large enough to cause obstruction to respiration, or are clearly diseased and believed to be the cause of recurrent local disturbances or secondary conditions, there is, as a rule, nothing to be done short of surgery. He adds that he cannot subscribe to the view that enlargement of the tonsils is in itself a menace, and he advocates that when the operations are performed upon the tonsils that, whenever possible, the capsules of the tonsils should be spared. He agrees with the view held by Makuen that the tonsils serve as protective agents in the faucial region. French concludes his paper with the following summarization of his views:

1. A differential diagnosis should be made to determine, if possible, whether the tonsils are the probable sources of infection or are free from disease. The indication in the clinical history and outward appearances of the glands are often sufficient for this purpose.

2. Because of the possible existence of a tonsillar function, also because of the subsequent pharyngeal deformity and the consequent alteration of the quality of the voice occasioned by tonsillectomy, it is desirable to leave the capsules in the tonsillar fossæ whenever possible.

3. While all extensively diseased tonsils should be enucleated, it is probably safe to say that at least eighty per cent. of enlarged tonsils do not contain foci of infection, and therefore do not need to be completely removed, and, indeed, unless obstructive to voice or respiration, do not need to be removed at all.

4. In cases in which there is a doubt of the character of the interior of the tonsils, but which are brought to operation for the removal of irritating or obstructive adenoid growths, a fairly accurate knowledge of the condition of the crypts or of the presence of pus sacs or pockets can be determined by removing, at the beginning of the operation, a substantial portion of one tonsil and submitting it at once, in a brilliantly illuminated field, to examination under a finely ground loupe with a magnification of from five to ten diameters.

5. If the tonsil from which the section was taken is found to be apparently free from disease, and the clinical history is without significance, the remainder of the gland should be removed by complete tonsillotomy—that is, down to the capsule. The opposite tonsil, if not obstructive, may then with propriety be left alone, but if obstructive, it also should be removed by complete tonsillotomy. If the exploratory section, however, shows that one tonsil is diseased, then both tonsils should be enucleated. The base left after a considerable part has been removed for examination can be as readily enucleated as if a part had not been removed.—Editorial in the *Therapeutic Gazette*.

Boston Medical and Surgical Journal of September 17, 1914, contains an article by BURNS, in which he states that his paper is intended to include briefly the essential facts pertaining to the treatment of pulmonary hemorrhage at the North Reading State Sanatorium, and the results that have been observed.

Although the treatment may vary in detail according to the stage of the disease which the patient may have reached, or according to the complications and individual peculiarities, there are, however, certain indications commonly present. These are for:

1. Absolute rest, the patient surrendering all effort to those in attendance.

2. The immediate lowering of the blood-pressure.

3. The determination of blood to parts of the body other than the lungs, this indication calling for: (a) application of cold to the thorax; and (b) purgation of the intestinal tract.

4. The positive assurance to the patient that he is in no danger.

The dissipation of this important psychic element and the doing away with the panicky fear and demoralization which seizes upon the average patient will result in better coöperation in carrying out the prescribed orders for rest and so forth.

Applying these principles to an actual case, the following procedure would be in order:

The patient is placed in a semirecumbent position, usually flat on his back, with curved basin at side of face for expectoration. Nitroglycerin, 1-100 grain dose under the skin, is immediately given from an emergency hypodermic unit. An ice-bag is placed on the chest and cracked ice is given by mouth for a few minutes.

This should not be continued indefinitely after the initial excitement is past, for the ice-bag is likely to cause trouble if applied for more than an hour at a time.

In the meantime the physician quietly encourages the patient, telling him that very few patients ever die as a direct result of hemorrhage, and that he will suffer no serious consequences provided he obeys his instructions implicitly. This advice is based upon the fact that only ten patients have died of hemorrhage at North Reading since the institution was opened in 1909. In those ten cases all was over in a very short period and too quickly for any treatment to have effect.

Morphine is given with great reluctance and only in hopelessly advanced cases, in which the sole indication is to preclude all possible suffering. If this drug is used as routine there occurs a secondary stage of trouble as soon as the hypnotic effect wears away.

After heavy doses of morphine, the lung congestion seems intensified, while the blood-pressure remains undiminished or is even increased, and the effect of the nitro-glycerin is neutralized. In addition to this there is increase in the constipation common to hemorrhage cases. The writer has occasionally found post-hemorrhagic pneumonias following morphine therapy, and he has seen a patient nearly drowning in his own blood under this treatment.

When the hemorrhage is so extensive that the blood rushes into the bronchial passages of the well lung, causing dyspnea and cyanosis, it is

best to turn the patient on his side with his head over the edge of the bed, allowing gravity to exert its influence in withholding the blood in the lung the worse diseased.

The writer wishes to emphatically discourage the routine use of morphine in the usual case of hemoptysis. It seems far better to open the intestinal tract freely in such cases. He uses magnesium sulphate in full doses, provided there are no positive contraindications, as extreme asthenia, enteritis, or any ulceration in the bowels. Troublesome sequelæ common to other methods of treatment are avoided, and the patient comes out of the attack in brighter condition and with a clean gastrointestinal tract, ready to assimilate simple nourishment.

No solid food is to be given for some hours after the initial attack, but cold milk or cold bouillon can be taken in small amounts at regular intervals. A drachm of lime-water is added to each eight ounces of milk to improve its digestibility and to add to the body's calcium content. Continued use of milk is tiresome to the patient and its constipating effect is marked. In talking over the matter of diet with patients having recovered from hemorrhage attacks, the writer finds that cold bouillon, if properly made, cold gruel, and malted milk are the most popular of the liquid nourishments. At the end of eighteen hours, barring recurrence, or heavy streaking, soft solids may be given.

The matter of diet is very important in the after-treatment, for with an excess of food and improper kinds, a recurrence of hemorrhage is invited, whereas too much starving of the patient results in loss of weight and strength, and a longer period of convalescence. In the meantime, the patient is kept as quiet as possible. If an aggravating cough is present, small frequent doses of codeine or heroin may be given, and with impunity so long as the bowels are kept open.

Sodium nitrate in one-grain doses may be administered to the patient at three- to four-hour intervals for from twenty-four to forty-eight hours. Subsidence of streaking, as well as severe headache, call for discontinuance of sodium nitrate.

The writer usually gives two doses of one ounce each of magnesium sulphate, one soon after the initial attack, and another on the second day. It is not best to continue this form of treatment beyond the two doses.

One week in bed with entire absence of streaked sputum is the requirement necessary before the patient is allowed up and about to any extent.

It must be borne in mind that constipation is the great obstacle in dealing with hemorrhage cases. Relief of this trouble shortens hemorrhage attacks and is a strong preventive measure when the latter are apparently impending, as may sometimes be evidenced by pain in chest at a particular point, streaked sputum, and a general feeling of malaise such as certain patients have learned to regard as usually prognosticating hemoptysis. Consequently the writer has emphasized this need to certain patients coming to him with histories of hemorrhage, and they have not only confirmed his belief with statements of their own experience, but have also brought about an abatement of their hemoptysis. One remedy for chronic constipation in these cases particularly reliable for use in the long run is oatmeal gruel taken in the evening. Its laxative and altogether

harmless effects are worthy of mention for use among tuberculous patients, especially with hemorrhage tendency.

For the past six months we have seen very few hemorrhages at North Reading State Sanatorium as compared with past years. This, too, in the face of a marked increase in the number of bed cases treated. Ordinarily, hemorrhages in the spring months are quite frequent, but this season we seem to have escaped the usual number of such distressing complications. This happening may be due to better coöperation on the part of the patients under the sanatorium-hospital class system, an outline of which was presented by Dr. Bailey before the recent meeting of the National Association at Washington.

HEROIN: ITS DANGERS AND THE TREATMENT OF ADDICTIONS.—Heroin is one of the family of the morphine group of the diacetic acid class. Until recently it has never gained any prominence as an anodyne or narcotic. In recent years it has come into use on account of its sedative qualities and is being used as a powder for inhalations through the nose. (Crothers, *Med Coun.*, September, 1914.) The nervous person or one suffering from irritation and disturbance of both digestion and the nervous system finds relief from its use for two or three hours, and then they repeat it. After a while this has to be repeated again and soon an addiction follows. The effects of the addiction are anemia, tremulousness, desire to sleep at unusual times, with a decided lowering of the bodily activities. Its use has become very popular.

The diagnosis of this drug addiction is made in the emotional changes of the patient from excitement to quietness and stupor, and lowered activities with a persistent pallor and anemia. Constipation and indigestion are natural sequelæ.

Treatment. Suphate of magnesia in ten to fifteen grain doses three or four times a day, unless the bowels become very irritable, is probably the best drug. Humulus used in infusion acts as a sedative, or valerian may be used for the same purpose. Hydropathic measures in the form of baths every day are essential. The rule should be to withdraw the heroin at once and depend upon the valerian and sumbul or asafetida compound to quiet the nervous irritation. Infusion of quassia is a very valuable tonic. Naturally there is a mental weakness which must be recognized and the patient must be profoundly impressed with the danger of the condition. There is no danger in the sudden withdrawal of heroin or cocain. In prescribing drugs it is always well to avoid tinctures of all kinds and use watery infusions. Heroin is a dangerous drug to a neurotic, and should its use be necessary, it should be concealed. The fascination of the effects of the drug lingers long in the patients memory so that constant caution and care is necessary.

(NOTE. A number of these cases have come to the reviewer's attention recently and it was a matter of great surprise to learn that the drug was being inhaled through the nose in powder form. And it was more astounding to know the large number of sufferers who obtain this drug here (New York) with so little difficulty).

COCCYGODYNIA: A NEW METHOD OF TREATMENT BY INJECTIONS OF ALCOHOL.—The leading symptom of this condition is pain in the region of the

coccyx. There are several theories as to the etiology of this pain: 1. The neuralgic theory which explains that the original trauma caused violent nerve irritation which persists without anatomical change. 2. Gräfe holds that it is a neuritis due to pressure of the fetal head on the terminals of the sacral plexus. 3. Injury resulting in fracture, dislocation, ankylosis or caries. 4. Symptomatic, a referred pain of central origin due to many functional or organic diseases of the nervous system. Difficult labor is the chief form of internal violence, while falls are the usual history of external violence. The pain which is the predominant symptom is a characteristic, spasmodic, aching pain in the region of the coccyx, increasing by sitting or rising, and at times by defecation and urination. The diagnosis is made by a rectal examination and by compressing the small parts just distal to the coccyx, between the finger in the rectum and the one externally. The pathognomonic symptom of pain is elicited. The various methods of treatment in vogue include counter irritation, local application, electricity in various forms, subcutaneous division of all muscles and ligaments attached to the side of the coccyx and finally excision or resection of the coccyx. The technique of alcohol injections is carried out as follows and may be pursued in the office. The patient with rectum empty assumes the left lateral (Sims) position on a firm table, with the thighs well flexed on the abdomen, and the region of the coccyx is painted with the tincture of iodine. An all glass Leur or similar sterile syringe of two c.c. capacity is filled with 80 per cent. alcohol and armed with a two-inch needle of fine gauge. The right index finger is now inserted into the rectum and the point of maximum tenderness is determined by means of counter pressure with the thumb outside. Maintaining the finger in the rectum to guard against its puncture and to act as a guide, the needle is now introduced through the midline directly to the point of maximum pain. When this is reached the patient exclaims with pain and the injection of ten to twenty minims is made slowly. The needle is withdrawn and the puncture closed with collodion. As a rule three and at the most five injections suffice. The interval between injections should average about a week.

THE SIGNIFICANCE OF BLOOD-PRESSURE READINGS.—MACWILLIAM and MELVIN (*British Medical Journal*) emphasize the importance of estimating the minimal or diastolic pressure, a practice which is now becoming more generally recognized. With the easy applicability of the auditory method there is no difficulty in the way of its routine use. Apart from the influence of aortic diastolic pressure in determining the strain upon the closed aortic valves, and the resistance to the opening of these valves by the ventricular systole, the distending force of load which it imposes on the arterial tube is of prime importance. The properties of the arterial wall are such as to show relatively great effects from long-continued tension as compared with the transient application of distending force, as in the brief rises of pressure that constitute the systolic waves. The greater proneness of the leg arteries to degeneration is especially associated, in all probability, with the high diastolic pressure in the erect position, rather than with the concomitant increase in the systolic level which is also induced by the influence of gravity. The evidence available at present is insufficient to show in what measure the injurious effects of an excessive

diastolic pressure are to be attributed to the influence of mechanical strain upon the tissue elements of the arterial wall, and to the influence of a high distending pressure on the flow of blood and lymph in the walls of the arterial tube. The more common conditions when the circulation is defective: Low systolic and diastolic readings (as in hemorrhage, shock, etc.) or a systolic pressure which may be normal or even higher, attended by an abnormally high level of diastolic pressure, as in some cases of slow cardiac failure. Here the peripheral resistance is increased, keeping up the systolic pressure, notwithstanding a poor cardiac output, but this involves a high diastolic pressure—that is, a small pulse pressure and associated defective movement of the blood. It is only in a small minority of cases with thickened and contracted arteries that a notable reduction of the systolic readings is induced by local compression. If the pressure readings from two limbs differ markedly on account of the occurrence a special form of closure in one artery as compared with the other, the pulse persisting much longer in one than in the other, it might be possible to elicit special evidence bearing upon the different conditions. In a case studied by the authors it was noteworthy that the systolic readings were much higher with the armlet on the calf of the leg than when on the thigh; the latter often nearly with the arm. They conclude from such results that the systolic pressure was really the same in the arm and leg, though the latter pulse was strikingly cut down to one of very small volume, which persisted until the compressing armlet pressure had been raised much higher. The authors interpret this result as being due to a different form of closure in the arm and leg arteries respectively, and they regard the leg arteries as the ones in which the behavior of the tube under compression was peculiar. The presence of contraction—that is, muscular resistance—is very important in human arteries when associated with certain abnormal structural conditions, determining the occurrence of special features in the process of closure of the vessel by external pressure, and thus leading to different readings of obliteration pressure that do not correspond with differences in the actual systolic pressure.

RECURRENT VOMITING.—The *American Journal of Diseases of Children* for October, 1914, contains an article on this subject based on 141 cases seen in private practice. The management in the main was the same in all, and one reason for reporting only the cases seen during the past eight years is that during this period practically the same interval management has been carried out.

Diet: If the case is a pronounced one, the patient is given a diet with few restrictions, except that cow's milk, butter, cream, and sugar are omitted. One egg is allowed perhaps every third day. Saccharin is permitted as a sweetening agent in some and very little sugar in any case.

Three meals daily are allowed with nothing between meals. Red meat is given scantily three times a week. Poultry and fish are given at other times. In some skimmed milk is allowed sparingly, never more than one pint daily, often less. Puddings are made with skimmed milk. A grave error in the management of many children is the free use of cow's milk, butter, ice cream, and sugar. The writer could present dozens of records showing surprising gain in weight and marked improvement in the general

well-being of the patient after a considerable withdrawal of milk, cream, and sugar from the diet.

The period of lactation in the human being is at the most a year, and then the child is ready for other food than milk. The writer believes that the average well child would thrive far better if he were to get not more than one pint of milk daily after the fifteenth month. Sugar was not used, except as a condiment as we now use honey, until three hundred years ago. Unknown millions lived their span without it.

Medication: The further treatment consists in the internal use of salicylate of soda, and bicarbonate of soda, independently or in combination, as advocated by Rachford. In a pronounced case the writer gives 5 grains of sodium salicylate with 10 grains of sodium bicarbonate three times daily at five-day intervals, or 20 to 30 grains of the sodium bicarbonate daily for a month or two at first. This drug treatment is carried on with rest periods for months and years as the case may require.

Bodily exercise: A very important factor in the management is in arranging daily physical exercise, such as riding horseback or the bicycle and walking so many street blocks a day. A warm bath and a brisk rub are given at night, and last but not the least important feature in the treatment is the use of physical therapeutics. In severe cases the writer uses if possible daily massage together with various body manipulations and exercises, the latter sufficient to make the child perspire, but not to the point of exhaustion. The advantage of this phase of the treatment was called to the writer's attention by Dr. W. P. Northrop.

Bowel function: A daily evacuation of the bowels is insured by suitable measures.

Some children the writer takes out of school. For others he advises a modified rest-cure, which means in bed until 10 a. m., rest one and one-half hours after dinner, and in bed and lights out at 6 or 7 p. m. The nervous element in these cases is not to be forgotten. If the attendant is not agreeable to the patient her services are dispensed with. In some a temporary elimination of the mother has been of assistance. The precipitation of an attack of fatigue and fright is not unusual.

The regulation of the life and habits aids materially in the management, but is of little or no use if the carbon content in the food is not reduced to the oxidizing possibilities.

As laxatives the magnesia preparations are best retained and are used when a laxative is required. Calomel or mercury with chalk will often increase the vomiting. In other cases their use supplies very material assistance. When the vomiting has continued for twenty-four to thirty-six hours the patient is given colonic flushings with sodium bicarbonate, 2 drachms to 8 ounces of water at eight-hour intervals. The solution is best retained if it is given warm (105° F.), the tube inserted from 8 to 12 inches.

Feeding: Nothing is gained by attempts at forcing the feeding. When the child is ready for food, he is given barley or rice gruel with dried bread crusts or unsweetened zwieback.

Judging from the results obtained through the withdrawal of highly energized foods and in the use of active and passive exercises, it would seem that the chief error in most cases rests in a defective oxidation, or in the giving of food substances of high carbon content in excess beyond the power of normal oxidation.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

SIR DYCE DUCKWORTH AND "HIS DISCOVERIES."—In the British *Lancet*, bearing date of November 28th, 1914, there appears an article by Sir Dyce Duckworth on "The Patient and the Disease." The address in point of fact is the First Hunterian Society Lecture for the session of 1914-15. Some of the statements made in the address are rather pertinent to the practitioners of our school. At one point in his remarks this English physician says: "It is, of course, a vulgar idea that medicines are employed to "cure" diseases. The homœopathic system is founded on nothing else. The charlatan treats diseases."

Turning our attention, however, to the *Organon*, of one Samuel Hahnemann, we read this rather significant paragraph:

"If, then, disease has nothing to show by removal of which it can be changed into health, save the complex of its symptoms, and if, further, medicines can show nothing of their power of healing except their tendency to excite disease-symptoms, it follows that medicines, to be true remedies, must uproot and remove the symptoms of illness by the power of the symptoms which they themselves can excite."

What does the noble baronet now think of charlatans and the treatment of diseases *per se*? Now as regards the "cure" of diseases it may be said that a Beneficent Providence has endowed us all with the potentiality of living long and useful lives, provided the same are not prostituted by foul behaviour or marred by the blight of disease agencies. And this endowed vital force is quite adequate, when unimpeded and when given a show to carry us all along peacefully and non-symptomatically. The brainy Hahnemann well knew this fact because after the ravages of disease were rendered nugatory by his scientific system of cure, health alone remained. We have but to turn to Paragraph 11 to be convinced of this assertion:

"It is not conceivable, nor can any experience in the world establish it, that there should remain, or could remain, anything but a state of health when all the symptoms of disease (the whole complex of perceptible phenomena) are removed, or that the disease-causing alteration in the inward of the organism should in that event continue unextinguished."

This, however, is not the only thing needing correction in Duckworth's article. We are not unaffectedly amused as he gravidly and rather sententiously remarks, "It appears to be forgotten that the educated physician treats *patients* and not diseases."

Again, if our noble casuist turns to the epoch-making *Organon* he will still find written the following interesting passage:

"Inasmuch, then, as in disease nothing that expresses the need for assistance can be discovered by observation except the complex of symptoms, it follows that it is precisely the totality of the perceptible symptoms,

and that alone which must afford the significant indication in disease for the selection of a remedy."

Timeo Danaos et dona ferentes.

DR. CHARLES H. DUNCAN.—It is with real pleasure that the late report of the committee on the methods of cure of infectious disease, as advocated by one of our school, Dr. C. H. Duncan, was so admirably confirmed. The method of Duncan is quite original, and in some respects resembles Wright's procedure in protective vaccination, at least in so far as both are quite distinctively Hahnemannian in principle and in the effects of use. Like Wright's method it is akin to an added method of potentiation. Hahnemann's method is a dilution and a succussion of the etiologic factor, that of Duncan is a case of dilution and filtration of the offending bacterial agencies, while Wright affects his bacillus typhosus by artificial cultivation with a subsequent lessening of toxicity by means of heating. Without the causal factor in modified degree there is no curative agent. Without the causal factor in modified degree there is no protective agent. And the reason is not far to seek. It is a simple case of mathematics—*two similar diseases cannot exist in the same body at the same time.*

In a recent issue of the *Medical Record*, one of the very foremost weekly periodicals of allopathic affiliation in the United States, the following was printed bearing upon the remarkable recent work of Dr. C. H. Duncan:

"Dr. Duncan's Autotherapy Endorsed.—A committee appointed last February to investigate Dr. Charles H. Duncan's method of autotherapy in the treatment of infectious diseases has recently made a report to the Homœopathic Medical Society of the County of New York commending the procedure as sound in principle and giving good results in practice. The membership of the committee consisted of Drs. Seward, Harrington, Laidlaw, Dieffenbach, Gillingham, and Stearns. The investigations of the committee were carried out in the fields of both human and veterinary therapeutics. In the latter it was found that autotherapy was of especial value in all septic conditions, in ozona, acne infections of the hoof, necrosis of the withers, and lacerated wounds of the legs involving the tendon sheaths in horses, some of which conditions were formally regarded as incurable. In the field of medical therapeutics the committee reviewed articles which had appeared in the *Medical Record* and elsewhere, examined patients treated by the method, and took the testimony, verbal and written, of physicians who had employed autotherapy. The committee found that the technique of autotherapy required further elaboration and precision in the size of the dose and the interval between doses, but that this did not detract from the soundness of the principle, nor should it take from Dr. Duncan the credit of being the first to see the principle clearly and of having started autotherapy on a sound practical basis. Dr. Duncan was also commended for having made no secret of his method, for having given the work freely to all inquirers, being actuated by a high sense of professional honor and of responsibility to the sick, and for having refrained from exploiting the method among the laity at a time when some of his fellow physicians were hostile and his friends indifferent."—*Medical Record.*

THE HAHNEMANNIAN MONTHLY.

APRIL, 1915

Transactions of the Homoeopathic Medical Society
of the State of Pennsylvania.

FIFTY-FIRST ANNUAL SESSION

BUREAU OF PEDOLOGY

HOMŒOPATHIC LEADERS IN THE TREATMENT OF DISEASES OF
CHILDREN.

BY

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WHILE, in the treatment of the sick we do not recognize the employment of certain remedies for adults, and others in the case of children, yet we are cognizant of the fact that the symptomatology of some drugs corresponds in general or in certain particulars, with abnormal conditions of the child. The fundamental idea in the treatment of children's diseases is that we must depend almost, if not exclusively, upon objective symptoms as observed by the parents, the nurse, or the physician himself. Although irrelative to the subject under consideration, I wish to emphasize the necessity of establishing a diagnosis of the disease no less than that of the remedy, without entering into any discussions as to the necessity of the former for the application of the latter.

The length or extent of a paper for the present purpose must

necessarily be limited, and at most only treats on prominent landmarks, leaving thus opportunity for those of ampler knowledge to fill up the gaps and vacancies.

How shall we approach the subject? Nosologically? This would necessitate the listing of all the more important diseases peculiar to childhood with reiteration of the more important remedies in the treatment of each and would be far in excess of the time and space permissible, even if the writer had the ability to do so. To present an alphabetical summary of remedies? This would, or might, apply—but it is a method the pursuit of which would probably have the most salutary effect of putting my hearers to sleep. Permit me, then, to present my subject in what might be called a quasi-clinical form.

Suppose the physician is called in great hurry to the bedside of a child. It is screaming and apparently in great pain. The pulse may be accelerated or not; there may be a febrile condition or not. Any position in which the child may be placed or anything that is done for it by the attendants fails to give relief. Such a case requires aconite, whether the pain is due to earache, teething, abdominal or any other cause. Suppose that on entering the room the physician finds the mother carrying the child without ceasing. She is told not to do so, with the statement that it will not do the child any good. She will promptly reply: "Doctor, it is the only way to keep baby quiet." Here, of course, chamomilla is the choice. Abdominal pains in young children are often relieved by pressure; three remedies may be mentioned here: Stannum; the child is relieved by being carried lying over the shoulder of the mother. Colocynth, by pressure of the hands and doubling up, and magnesia phos. relieved by pressure and application of heat. This remedy acts better when administered in hot water. Abdominal pains which are accompanied by great distention of the abdomen with gas; the child screaming and getting blue in the face require senna.

We are called to see another case; it is in the afternoon, the child apparently well, takes its afternoon nap, out of which it awakens with a scream and in great agitation. The face is flushed, the carotids evident by their pulsations and the pupils dilated. There may be jerking of single muscles, or more generalized convulsive movements. If any sweat is present it is hot. The lifting of the bed covers emits a stream of hot air. These symptoms together with the sudden onset unmistakably point to belladonna, whether the symptoms are those of an exan-

themnic fever, a diphtheria, a meningitis, or are simply reflex to some abdominal disturbance. With the arterial and nervous agitation, should there be entire absence of all convulsive movements, but more pronounced restless tossing about and especially if there had been an exposure to a cold northwest wind—aconite of course would be called for.

In delirious states of children, compare belladonna with some other remedies. Hyoscyamus: here the delirium is less violent, more muttering, the child picks its face, lips or bed clothes; older children are inclined to expose themselves—Phosphorus—generally the child is better in the dark. In the stramonium case, the child awakens terrified, screams, knows no one, clings to mother or nurse and is generally better in a well lighted room. Lycopodium: confused on awakening, does not know where it is. Zincum: also confused on awakening as though coming out of a horrid dream, with grinding of teeth, trembling all over; staring eyes; hot occiput and cool forehead; the child constantly moves its lower limbs.

In spasmodic states, besides belladonna, think of cicuta, if the convulsions are very violent, especially if accompanied by opisthotonus. Cuprum acet. if paroxysm is preceded by a scream. Spasms in a child following chastisement or after fright of the nurse requires ignatia.

In febrile conditions accompanied by drowsiness, disinclination to move, think of gelsemium, in the presence of catarrhal symptoms and great muscular weakness. Ferrum phos. in congestive conditions of internal organs, especially of the lungs and bowels.

Nervous conditions of young children should never be passed by as trifling. A child overexcited and sleepless from pleasurable circumstances, parties, playthings, etc., needs coffea. An unexplainable dread of any downward motion, causing the child to become terrified and to hold on to the mother or nurse calls for borax. A child that wants to get up in the night to play or be talked to and entertained needs cypripedium.

Irritability, crossness, is oftentimes encountered in young children and when it occurs as an abnormal condition, the homœopathic mind almost automatically seizes upon chamomilla. In this remedy the child is generally cross and irritable and unsocial, wants this thing and that, which, when offered are pushed aside or thrown away (also cina), better when carried about, one cheek flushed and the other pale; crossness of infants

after anger of the nurse, diarrhoea is apt to be present. Children that cry and become irritable when looked at or touched make us think of the antimonies.

Antimonium crudum: In gastro intestinal disturbances with a chalk-like tongue. *Antimonium tartaricum* in bronchial troubles, the child wants to be walked. *Cina* likewise has this irritability, aggravated by being looked at and touched, especially when the child picks its nose and seems to be eased by being trotted up and down or rocked. *Arsenicum*, in cases with prostration, emaciation and great restlessness. Thirst for small quantities of water at frequent intervals; worse after midnight. Irritability on awakening, also—*lachesis*, *lycopodium*.

When a child presents a condition almost the reverse of the one just mentioned, a condition of indifference to everything, child cares for nothing, think of phosphoric acid. *Calcarea carb.*, the senses, except hearing, are dull.

In conditions of stupor or complete apathy, we think of opium, when the eyes are fixed, pupils contracted; *belladonna*, moaning or jerking of muscles; *helleborus*, sighs from time to time, forehead wrinkled, child puts its trembling hand to the head. A sudden piercing scream during sleep or stupor, the so-called *cri encephalique*, calls for *apis*. Crying before the cough, *arnica*; with or after the cough, *belladonna*. Crying while urinating relieved immediately afterward, *lycopodium*—especially if there is red sand deposit of uric acid upon the diaper; also *sarsaparilla*, child cries when the last drops of urine pass. *Lycopodium* has a peculiar symptom: child cries all day and sleeps all night; the opposite condition obtains in *jalapa*. When a sick child wants to lie constantly on the mother's lap think of *cuprum acet.*

In constitutional states, the following remedies may be considered: *Calcarea carb.*, especially in fat children with atony of fibre; pale, flabby, the so-called leucophlegmatic temperament, fontanelles open, sweat about the head, may be cold and sour smelling; a wet patch on the pillow where baby's head lies; disturbances of metabolism; gastro-intestinal derangements; distention of the abdomen and especially over the epigastrium. Partial sweats, especially of the legs, which feel cold and clammy as though the child was wearing wet stockings. The *calcarea* child is apt to be self willed and has a large head. In its congener, *calcarea phos.*, we have rather general emaciation and debility; cannot walk, child more anxious in its manner with a tendency

toward imbecility; green morning diarrhoea. Both calcareas have this symptom; child is late learning to walk, while in the phosphate it may lose the ability after it has acquired it. In both we have defective dentition, the carbonate corresponding rather to primary—the phosphate to the secondary period. Children that are plump, look well but are weak, require calcarea iod. In children with ravenous appetites and progressive emaciation, child does not want to be spoken to, think of iodine. In children with distended abdomen and emaciated bodies, let us not forget baryta carb. and silicea. The former is mentally and physically deficient, dwarf-like child will sit in a corner indefinitely doing nothing; the latter is rather irritable, restless child, cries when kindly spoken to; head large, sweaty. Both these remedies have offensive foot sweats—rarely met in young children. In emaciated conditions of children we may think aside of those aforementioned—of sulphur, especially in so-called scrofulous or tuberculous complaints of children; face has a wrinkled, very old look; child jumps, starts and screams fearfully; does not want to be washed; all the mucous outlets of the body have a red, irritated appearance. Whole body has an ill odor, more marked in barium. When the emaciation begins in the feet and extends upward, think of abrotanum; reverse, lycopodium, psorium and natrum mur. The last named remedy has great emaciation of the neck, especially in whooping cough.

BUREAU OF MATERIA MEDICA AND PROVINGS

USEFULNESS OF MEDICINES.

BY

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INTRODUCTORY NOTE: During the past half century much of the former popular and professional favor has been lost to medical therapeutics, while the number of advocates of drugless-healing methods has yearly increased by the hundreds. Despite this change in favor, the very definite place of medicines in treatment of the sick must be maintained: their action,

whether successful or without the desired result, being governed by definite principles readily grasped by the thoughtful mind open to the testimony of facts.

The very widespread rejection of medicines for treatment of physical ills has been developed through the disappointments of long-hoping sufferers and of doctors, as well, of whom many from both classes have recognized the frequent failure of serious disorder and of lesser distress to yield to the prescribed medicines administered. At times these treatments with medicines developed a substitution of malady worse than that originally present.

What were the bases of these prescriptions? Not infrequently, preparations of some animal or vegetable or mineral product have been recommended because here or there some sufferer had found relief after using them, singly or combined, for diagnosed disorder of the same name. The remedy helped A; B has the same ailment,—it may help B. When it does not help B, or C, or D, it may lose their favor; but for all who knew only of A's relief, its repute continues for that disorder.

Such disappointing experiences brought discredit upon the use of medicines in sickness, with contempt for therapeutic application justified when practiced on such indefinite bases.

Mechanical and mental therapy, as substitutes for medical treatment, have gained more or less esteem. Of these:

Surgery, the oldest mechanical treatment, operates only upon the tissue-results of disorder, exerting no power whatever upon those influences through which such results were developed.

Other mechanical treatments—as osteopathy, mechanotherapy, chiropractics, massage, electricity, vibration, etc., achieve a local control of nerve-functions or circulation-currents; they thereby remove or change symptoms which are dependent on these local disturbances. While there is subsidence of pain, congestion, irritations, and of functional organ-disturbances, yet remains the fact that these several manipulations extend no further than to the physiologic processes upon which they are specifically directed.

They do not enter deeply enough within the economy to prove curative, except for disturbances dependent entirely upon mechanical injury or mal-adjustment. Hence, physical therapeutics operates only in palliative degree—provides only palliative measures.

For mental healings, various forms of treatment are advocated by their several promulgators and disciples; thus far, all these lack evidence that the forces invoked are under control of the operator. Before achieving an intelligent acceptance of these methods, there must be demonstrated a mastery of all phases in the relation between patient and operator and force.

One institute of suggestive therapeutics formulates a definite course of systematic instruction for students, claiming a scientific method of cure susceptible of their acquirement. Such success as these devotees may attain is entitled to be estimated by the specific tests through which cure is predicated: the promptness, mildness and permanence of a restoration to health according to readily comprehensible principles.

Scanning the field of practical medical therapeutics, we find that for the past hundred years and now extending into a second century of successful activity, Homœopathy has established a new force, in its science and art of healing by use of medicines (drugs). The doctrines of healing, as a science, and their application as an art intelligibly submitted and registered, published in "The Organon of Rational Healing" (Hahnemann), are open to every inquirer.

These doctrines and instructions on their application should be familiar to every practicing homœopath, yet many printed and oral discussions of sickness and its treatment warrant calling attention to certain points of the doctrines in practice.

SICKNESS.

Through years of careful observation, registered with equal care, various forms of disorder were demonstrated to follow, under control of unchanging law, a definite course. These various deviations from health appear in periods of definite symptoms:

A period of prodrome;

A period of progress;

A period of recovery, or one of continuous activity, accordingly as the nature of the disorder is acute or chronic.

While the disorder, in each instance, begins operations internally, the first manifestations in symptoms are on the externals.

Suppress these external manifestations by any means whatever, without checking the internal disorder, and it thereupon

develops its manifestations more internally in a fresh group of definite symptoms.

EFFECTS OF DRUGS.

Through like careful observation was demonstrated the law governing the effects of administered drugs.

Each, when studied, is found to exert an individual action, manifested by characteristic symptoms:

To be best ascertained by observing the action of a single drug administered to those in health.

Indeed, this is the only rational method of determining the power of any medicine. Accepting the proposition that drugs are to be used, intelligent use demands that the pure effects of each individual drug be ascertained and recorded. To observe their effects otherwise than of one at a time, or to observe them in persons affected by some other disturbance, must result in confusion and uncertainty.

Furthermore, "it requires many provers of different types and of different defective reactions to bring out the complete picture of a drug-pathogenesis."¹

ON THE HEALTHY.

Through Hahnemann's keen observation of the characteristic effects developed by drugs in their provings on the healthy and his perception of their influences, he demonstrated that animal, vegetable and mineral forms hold relation to man in all his functions and faculties, by which these substances exert their influence in disturbances of the life-force, from center to circumference.

ON THE SICK.

When administered to the sick, drugs which produce symptoms opposite to the symptoms in the patient check those symptoms, forcing upon the economy their own opposite effects:

Constipation is replaced by diarrhœa, weak heart-action is stimulated to stronger action; pain gives way to painlessness, so long as the drug-action continues. When the drug is withdrawn, reaction of the economy occasions return of the former symptoms, even more persistent. When the drugs administer-

1. *The Homoeopathician*, September-October, 1914, p. 296.

ed are characterized by symptoms not opposite, but of different type from those existing in the sick person, the original symptoms disappear to be replaced by new drug-symptoms. Under the influence of the drug-force the expression of disorder is diverted—is distorted.

The symptoms in the sick person most similar to the characteristic effects of the drug administered disappear under its influence; when the drug-influence is withdrawn, the economy is freed from both disturbances.

The remedy most similar in all characteristics to the most characteristic features of the sick individual changes the internal disorder into order, and consequently all manifestations of disorder disappear.

For therapeutic purposes, therefore, the Law of Similars becomes our guide for curative action.

To secure such effects, we must become familiar with the action of individual drugs, and we must prescribe the homœopathic remedy.

THE HOMŒOPATHIC REMEDY.

"The homœopathic remedy is always that drug which, in its pathogenesis, exhibits the morbid symptoms of the actual patient we desire to cure." ²

Obviously, this cannot be determined without knowing the morbid symptoms presented by the patient. To retain a careful record of these symptoms and the changes in each patient is a prime necessity for intelligent study. The physician in active practice is unable to carry in memory the details of many patients, of even one day's consultations.

When you have recorded the symptoms on paper, it is first necessary to realize the *relative importance of the marked symptoms*.

"Symptoms common to the disease," or "common to a number of drugs . . . do not serve to distinguish; and you must distinguish." ³

"Sick people present symptoms diagnostic of the disease, plus other symptoms; and these other symptoms pertain to the patient." ⁴

2. *Ibid.*, p. 292.

3. *Ibid.*, pp. 293-4.

4. *Ibid.*, p. 311.

In addition to the essential features of whooping-cough, each child so affected has peculiarities of the paroxysms:

Times they are worse;

Circumstances that induce paroxysms;

Effect of the paroxysm on the patient.

One desires to be active; another is tired and weak; etc.

CLASSIFICATION.

For the sake of convenience and intelligent study, the symptoms pertaining to the patient are termed *generals*.

Those that pertain to some part of the body, some organ, or to some local function, are *particulars*.

Symptoms diagnostic of the specific disorder, including its tissue-pathology, those common to the pathogenesis of many drugs, are *common symptoms*.

In each case, "The physician must work to settle [what are] the *Generals*, the *Common*, and the *Particular* symptoms if he wants to save work." ⁵

"Symptoms of supreme importance to the case, expressing most absolutely the patient are the *mental symptoms*." ⁶

"Whatever can be predicated of the patient is a *controlling symptom*." ⁷—a *general*.

The characteristics of sick people and of drugs must be worked out on this basis. Resemblances of patient and remedy must be sought and found. So-called *key-notes*, be they *generals* or *particulars*, are useful guides only in proper subordination: if the majority of *generals* do not conform, the *key-note* must be reckoned of inferior importance.

"A patient's own individual remedy, prescribed on *mentals* and *general symptoms* alone, will often wipe out peculiar symptoms never registered as having been evoked by it—symptoms which are recorded as the leading *key-notes* of some other remedy." ⁸

"Do not expect a remedy that has the *generals* must have all the *little symptoms*. It is a waste of time to run out all the *little symptoms*, if the remedy has the *generals*." ⁹

Prescribing with *the symptoms of the patient* as the guide

5. *Ibid.*, p. 297.

6. *Ibid.*, p. 295.

7. *Ibid.*, p. 311.

8. *Ibid.*, p. 296.

9. *Ibid.*, p. 298.

clears out the particular and the common symptoms, and removes the disorder. When the prescription is based upon the particulars and the common symptoms, it, if in any degree effective, merely produces some change in these symptoms, while *the symptoms of the patient* continue—the disorder is not eliminated: and drug symptoms may be added!

KNOWLEDGE OF MATERIA MEDICA.

As the homœopathician must select for each patient the remedy whose characteristics most closely resemble those of that patient, the physician must make himself familiar with the pure effects determined and recorded of the several remedies composing the materia medica.

Obviously, one who does not accept the Law of Similars as the guide for treatment—who does not seek the homœopathic remedy for patients treated, can scarcely be said to practice Homœopathy. For those who do attempt this accurate administration, Materia Medica study is of equal, weighty import and parallel to that of the symptomatology.

An American medical journal recently published an editorial upon Materia Medica study, equally discouraged in prospect and in retrospect. According to that pronouncement, after twenty years' practice, studying week after week with determination to become proficient in Materia Medica, one is forced to confess an inability to produce, without preparation or notes, a ten-minute lecture on the best-known remedy in the pharmacopœa. The entire article hopelessly proclaims the futility of works on this subject and on therapeutics:

"So faulty in construction as to make them impractical, even absurd, and to have done much to retard progress of the school. Struggle as we will, our knowledge of drug-action is so meagre that some of us have almost wholly discarded drugs in our daily work; surgery and other mechanical methods have supplanted them entirely."

This was the confession. From this article it appears that scores of men in the ranks of Homœopathy have declared that they do not prescribe homœopathically because they do not know how; not because they do not believe in the principles of Homœopathy. The conviction is expressed that prescribing according to the Law of Similars is omitted from the daily

work of physicians because they are unable to learn the *materia medica*, sufficiently to rely upon it.

As contrast to the vigor which distinguished our pioneers and their recorded achievements in this work, a complaint is postulated: "We have several hundred more remedies with ten thousand more symptoms than ever dreamed of by Hahnemann," etc.—instead of accepting these additions as increase of facilities for cures.

The victim of these convictions is suffering the inevitable result of a continuing attempt to repeat symptoms and commit them to memory: a method entirely inadequate to the needs of the work, unnecessary as it is useless.

On the contrary, one may readily grasp the scope, the genius, and the "personality" of remedies and may become as familiar with their abilities and affections as with those of his human and less attenuated acquaintances depicted or met in daily life.

The *vital characteristics*, the *modalities of varying times and circumstances*, as shown in Kent's *Materia medica* sketches, present the several remedies in recognizable outlines, distinguished for utility as severally talented personalities. In them are recognized the species of sicknesses presenting to the physician from day to day, even as they were presented in the forms of sickness met by Hahnemann and the early coadjutors in homœopathic prescribing.

THE REPERTORY.

But the fact must be promptly recognized that our *Materia Medica* does contain vastly more of symptomatology than may be carried in any man's memory. Yet all these registered symptoms, made conveniently accessible, are illuminating and will aid the careful physician and his patient.

In the Repertory, the vast index of *materia medica*'s wealth of experience, may be found the intelligible record of symptoms, arranged systematically with the lists of remedies with which each symptom relates.

(A detailed description and scheme of utilizing the Kent Repertory, with copious illustrative cases from clinical practice, is published in *The Homœopathician*, Sept.-Oct., 1914.)

This "range-finder," as Dr. George H. Thacher has militantly defined it, materially delimits the physician's necessary research-work and broadly enlarges his faculty to select remedies with an accuracy approaching the mathematical.

Adopting this guide to the *materia medica*, the novice may become a master; the prescriber youngest in experience has access to and consultation with all that has been gleaned by the provers and masters of *materia medica*. of many countries.

Next best to the knowledge of a given fact or truth is the knowledge where to find it; in the Repertory are recorded the facts: the characteristics of the many individuals of our working *materia medica*.

POTENTIATION.

Similarity in symptomatology is not all of Homœopathy. To reach that internal disorder within the economy operating to the outermost, it must be subjected to the influence of the inmost quality of drugs: that immaterial substance which imparts to each its individuality; that interior quality which is deeper within than the crude envelope of distinctive physical properties such as color, taste and odor.

By potentiation the effective active element is liberated as the crude destructive properties are removed, from poisonous arsenic, etc., and the protective crude envelope is withdrawn from inert substances: as silica, milk and salt.

In Hahnemann's experience, the most suitable remedy, that is, the most similar remedy, when administered in crude form developed too much irritation in the patient. For avoidance of this, he was led repeatedly to reduce the material dose of the remedy; doing so, he further discerned that the curative power of remedies was greatly increased through this reduction.

This experience has been repeatedly demonstrated, to the present day, when prescribers of the most recently advocated serums and medicines find it necessary to attenuate their dosings to avoid baneful effect, and thereon realize anew an increased therapeutic value.

In this effort to assure the incidental relief, prescribers recently advocate the administration of colloidal preparations of remedies, thus rendered assimilable in the system; but the most simple and efficacious method yet devised to free the active inherent and characteristic element of the drug is by POTENTIATION.

THERAPEUTIC CONTRASTS.

The difference in results: obtained by administrations of crude forms of medicines, prescribed on a basis merely of ex-

perience or of pathological exhibits, from: those obtained by use of the same drugs selected for characteristic symptom-similarities observed in the healthy, and administered in potentized form may be readily illustrated.

Some patient in rheumatic condition experienced much relief through being stung by a bee! This announcement elicited reports that others had been in like unsought manner benefited. Thereupon proclamation was made: Bee-sting will cure rheumatism.

Sufferers of this chronic distress hastened to submit to the usually shunned poison of the bee. Their many disappointments announced another failure of specific-remedy, with science no nearer that goal.

Yet the honey-bee, as every homœopathician knows, potentized and administered according to the Law of Similars, in properly regulated dosage as *APIS MELLIFICA*, does cure victims of rheumatism, leaving the patient in freedom.

Apis patients: sufferers from heat, who want cool applications and cold drinks and affected mostly on the right side, exhibit much swelling of the affected parts, with none of the prominent general symptoms conflicting with *Apis* characteristics will experience relief from this remedy. It will also dispel diphtheria, erysipelas, inflammation of internal organs (from brain to bladder)—when the symptom-characteristics agree. The relief will be more than temporary: the internal disorder will be resolved and all the local manifestations will disappear.

Radium.—The blighted hopes of bee-sting remedy had counterpart in the experience of those who sought rheumatism-cure and cancer-cure in Radium. This nevertheless produces effects similar to both of these conditions, and in patients presenting the symptom-characteristics of Radium its use in proper dosage will cure the patient and eliminate the local evidences.

Opium.—The remaining effects after the passing of the temporary relief from the narcotic opium, used for alleviating pain or to produce abnormal sleep, are so serious in comparison to its questionable benefit that the more thoughtful to-day abhor its use. But this drug, administered in potency, prescribed under its homœopathic indications quiets convulsions, restores reaction in cases of shock, reduces inflammations and congestions that threaten life and mental balance. It serves as a stimulus to suspended vitality; and after its mission in the economy is

served no mischievous influence remains to cloud its good repute.

Sulphur.—Through many decades sulphur, applied as ointment and lotion, has in many instances cleared the skin of itching and disfiguring eruptions. Further, it imposed disorders in the economy far more disastrous because disturbing to the functions and the integrity of internal organs of the afflicted patient; merely suppressing the original manifestations of the disorder which displayed the eruptions.

Sulphur-provings exhibit similarity to so many chronic complaints that it is reckoned a prime anti-psoric by homœopathicians. It is a remedy capable of reversing the suppression, and of restoring order in the economy: comfort and physical competence to the suffering invalid, when indicated according to the doctrines.

Nosodes.—Specific serums, administered on the basis of a diagnosis, by aid of bacteria grown in suitable media, are recently much exploited as cures for many acute and chronic disorders. Their prescribers do not yet perceive why such remedies appear beneficial in some instances and clearly harmful in others. As they observe the effects of the serums they are induced to lessen the doses repeatedly until extremely minute quantities are used. These reductions are necessary for avoidance of the serious evil effects from larger doses.

The use of these same disease-products potentized and selected according to the Law of Cure result in the prompt, mild and permanent removal of the disorders of patients who are homœopathically related to the remedies.

CLINICAL ILLUSTRATIONS.

Rev. J. G. S., now in his eightieth year, has, at intervals for several years suffered the inconvenience of enlarged prostate gland. In January, 1914, he had added to this, an acute cystitis which cleared entirely, under the influence of *Apis* and *Sulphur*. He has lived in general comfort and without urinary inconvenience from that time until this summer.

In the latter part of July he noticed increased frequency of urinary urging with slowing of the stream of urine. This gradually increased until inflammation of the neck of the bladder brought intense suffering, the consequent weakness confining him to bed. Eventually not only was use of a catheter nec-

essary, but assistance of a nurse was required in its frequent introduction.

Thick, stringy mucus and blood clogged the catheter, requiring repeated insertions and withdrawals each time the bladder was to be emptied, the fluid voided being scant in proportion to blood and mucus.

Several remedies, including those used in the winter siege, were administered, in succession: each one failing to control, as evidenced in the steady increase in weakness and haggard appearance of the patient while the local pain gave constant distress. Then the following repertorial study was made:

Bladder, pain at neck after urination: Apis, apoc., can-s., con., fl-ac., nux-v., petr., puls., ruta., sars., sep., stan.

Urethra, pain during urination: burning. Apis., apoc., CAN-S., con., fl-ac., NUX-V., petr., puls., sars., sep.

Urine blood: APIS, CAN-S., con., nux-v., petr., PULS., sars., sep.

Inflammation neck of bladder: Apis., nux-v., puls., sars.

Sediment purulent: Can-s., con., nux-v., puls., sars., sep.

Urination feeble stream: Apis, petr., puls., SARS., sep.

Sediment mucus: Con., nux-v., petr., puls., sars., SEP.

Urination retarded: Apis, nux-v., petr., puls., SARS., SEP.

Tremulous weakness: Apis, con., puls., sep.

Perspiration on thighs: Nux-v., sep.

Perspiration on thighs cold: Sep.

With review of the entire case in the light of this anamnesis, the prescription was made:

Aug. 20, 8 A. M.

SEPIA—

Beginning at the hour this remedy was taken, a change was observed. By evening the countenance presented a different aspect, the voice was stronger, patient generally more comfortable, and urine was voided with less distress, and consisted of more fluid with less mucus and blood.

Recovery continued so that in two weeks he was walking about the house, gaining strength daily, able to urinate freely without the catheter. To-day (Sept. 25) he presents himself that you may see how strong and comfortable he is, having traveled forty-five miles, to make the return trip this evening.

For a second illustration this boy of eight and a half years has come to display the benefit of non-surgical treatment for adenoids. Last year he carried home from the school-doctor,

notice of the presence of adenoids in his pharynx, with recommendation for surgical removal thereof. When the doctor called at the house and learned that the child was under treatment, and no intention of operative measures was entertained, she expressed the supposition that she would have the opportunity and duty of reporting the child to them, each year.

Mouth-breathing, nasal discharge, stuffy voice, symptoms clearly apparent to the observer, have disappeared under the influence of TUBERCULINUM and GRAPHITES. In his aspect to-day, you detect no intimation of dullard. The Binet-Simon tests, to which he has just submitted, with Dr. Garner, indicate general mental development in advance of the average, though not perfect in all particulars.

The results in these single examples of the usefulness of medicines are considered superior to surgical or other local interference, or prescriptions based on tissue-pathology. The local manifestations of disorder have disappeared while the general condition of the individuals progress toward HEALTH.

BUREAU OF SURGERY

BULLET WOUNDS OF THE ABDOMEN.

BY

C. H. HARVEY, M.D., PHILADELPHIA.

OWING to the location of the West Philadelphia Homœopathic Hospital, in the centre of a population of 200,000, we receive a larger number of accident cases, and of these, a great many are punctured wounds of the abdomen. In the past five years, we have had several bullet wounds of the abdomen which were operated—with one death. These cases were ward patients: in a general ward, both medical and surgical, which exposed them to infection. We did not have any infection, however, and those who recovered, never had any pus in their wounds. The patient who died only lived six hours after the operation.

The success obtained is ascribed to the immediate operation during the first shock (as all the cases were greatly shocked): an exhaustive search of the abdominal contents for every bleeding point and for punctures of the alimentary canal and abdomi-

nal organs; never closing the incision entirely, leaving a gauze drain to take care of any slight bleeding or discharges from the alimentary canal; the use of moist dressings continuously; to the absolute rest of the stomach and intestines for at least six days by rectal alimentation, and last, but not least, infusion while being operated.

Of these twelve cases, I will give in detail two that were very similar in their injuries and recovery. They were neighbors, one living 5021 Market street, and the other 5033 Market street, Philadelphia.

CASE I.—J. H., a young man of twenty years; single; Roumanian; in this country a few months when he developed a dementia during which he attempted suicide.

On April 27, 1914, he was admitted to the hospital at 1.30 P. M., suffering from two gun shot wounds of the abdomen. One bullet had entered in the middle of the left hypochondriac region between the eighth and ninth rib; the other, one inch above the umbilicus. He was suffering from great pain and was very badly shocked. A radiographic picture of the abdomen was immediately taken and it showed both bullets lodged in the muscles of the back along the spine, slightly below the points of entry—about two inches.

The patient was prepared immediately for operation and a two per cent. solution of iodine and alcohol applied. An incision was made in a line from the edge of the ribs to the lower bullet wound. As we started to operate, we began to infuse a normal saline solution, and, during the operation, gave him thirty-two ounces. When the abdomen was opened, we found it to be full of blood. Two bleeding points were discovered in the omentum, one in the wall of the stomach and two in the mesentery. These bleedings points were stopped, and we proceeded to look for the course of the bullets. The upper one had penetrated the stomach at its middle, going through it and coming out the under side, where it cut a branch of the gastro-epiploic artery and lodged in the muscles alongside of the spine.

The second bullet entered about an inch above the umbilicus, penetrating the transverse colon in the upper side, out the under side, penetrating three convolutions of the small intestines, going through the mesentery and cutting through two arteries, then entering the muscles of the back along the spine about five inches below the other bullet.

I picked up and sewed the holes in the stomach with a purse

string catgut No. 1 suture, inverting the raw edges into the stomach. On the end of these sutures were placed clips.

The transverse colon was next attended to and sutured in the same manner. I followed down the small intestines and found six holes in them which were sutured in a similar manner; repaired the two holes in the mesentery with a mattress suture, completely stopping the bleeding at these points. This done, I went all over the small intestines in an effort to find additional holes, and, in the course of my examination, discovered two stomach worms in the small intestines. My assistants also said they felt these worms.

After a thorough cleaning out of the abdomen and removing the blood, I picked up the clips I had left on the end of all of the sutures, and the gastro-intestinal wounds that I had sewed, I then used the Lembert suture to reinforce the purse string sutures, cutting the ends of the first sutures, turning them in, and completely burying them.

After treating ten wounds in the alimentary canal in this manner, I wiped the abdomen clean and placed a quarter of a yard gauze-drain over the back of the stomach and let it come out the upper angle of the wound. The abdomen was closed with the exception of a small opening near the upper angle for a drain. One per cent. of antiformin was placed on the wet dressings, and the patient reacted very quickly but suffered excruciating pain. A hypodermic was administered of one quarter of a grain of morphine to alleviate his pain; this was repeated twice the next day. The outer dressings were changed daily, and were replaced with one per cent. wet antiformin dressings. On the tenth day, the iodoform gauze was removed from the abdomen and a smaller one inserted, which was entirely removed on the twentieth day.

The nutrition was rectal feeding, administering a nutrient enema night and morning. After the reaction, we gave him continuous enteroclysis—one hour on and one hour off—for eighteen days. During the first six days the patient had nothing in his stomach, but the nurse wet his lips often with cold water. On the seventh day he was given albumin water every three hours; on the eighth day liquid diet every three hours, and on the eighteenth day a soft diet.

On the twenty-first day the patient passed the two stomach worms we felt in his intestines. After this his progress was rapid and satisfactory. On the twenty-seventh day—low diet;

on the thirty-third day—medium diet; on the thirty-fifth day—full diet.

The day after the operation the patient's temperature was 98.4, pulse 108, respiration 24. At no time was his temperature over 99.2, but his respiration was as high as fifty on the one day—the second day after the operation. This, however, lasted but a short time, and the next day it dropped to thirty-two, and the next to twenty-four. Practically all through the case the temperature was 98.4, pulse 108 and respiration 24. The pulse dropped to about ninety in a short time and the respiration continued from twenty to twenty-four.

The patient was allowed to get out of bed on the thirty-third day, as at this time he was fully recovered.

CASE 2.—T. H.; male twenty-one years of age; was shot by a bullet in the left lumbar region, while fleeing from an officer, the bullet striking the body of the second lumbar vertebra, being deflected upward, and lodging in the abdominal wall at the outer edge of the border of the ribs, at the middle of the left hypochondriac region.

The patient was brought to the hospital on the 17th day of June, suffering from great pain and very badly shocked. The radiographic picture showed that the bullet was lodged in the anterior abdominal wall. A two per cent. solution of iodine and alcohol was applied and he was operated at once. The incision, which was carried five inches downward over the middle of the rectus muscle, was made over the region of the bullet which was easily found. It was discovered that the ball had entered the stomach about the middle, cutting a branch of the gastro-epiploic artery.

We discovered a bleeding point in the omentum, and down in the region of the kidney there was an oozing of venous blood. The patient was infused throughout the operation with twenty-eight ounces of normal saline solution. The openings in the stomach were sewed with a purse string catgut No. 1 plain suture, the raw edge inverted into the stomach. These were reinforced later in the same manner as in Case I. The bleeding points were tied, and a quarter of a yard of iodoform gauze was placed in the back of the stomach and brought out at the upper end of the wound. The abdomen was closed with the exception of the upper angle which was left open for the gauze drain. The wound was dressed with a wet antiformin solution

and the patient was given a nutrient enema night and morning. The principal thing used was peptonized milk.

Continuous enteroclysis was used—one hour on and one hour off—and his lips were frequently wet with water. During all this time, there was nothing in his stomach; nothing was given by mouth until the eighth day, when he received panopepton in water, three times a day for two days, and on the tenth day, a liquid diet every three hours; on the fourteenth day, enteroclysis, one hour on and three hours off.

On the twelfth day, the drain was removed and a smaller iodoform gauze drain inserted. The outer dressings were removed daily and replaced by new moist antiformin dressings. On the eighteenth day the drain was removed and he was placed on soft diet; on the twenty-fourth day low diet; and the twenty-eighth day medium diet and out of bed. On the thirty-first day full diet. He was discharged on the thirty-third day, fully recovered.

In conclusion, I would say, that the success in the treatment of these cases, teaches that we must be fearless and bold; go all over the abdominal contents carefully, never falter, and victory will crown our efforts.

BUREAU OF PATHOLOGY AND PATHOLOGICAL ANATOMY

THE ABDERHALDEN TEST AS APPLIED TO MALIGNANCY. PRELIMINARY REPORT.

BY

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WHEN Abderhalden presented his works on serum diagnosis of pregnancy, he opened a field which has brought forth many scientific investigations. Many conditions; such as, cases of Graves's disease, dementia praecox, carcinoma, sarcoma, tuberculosis and others have been tested with accurate results.

The theory upon which he based his findings was the presence of specific proteolytic ferments in the circulating blood.

The principle of the dialysis method of serum diagnosis rests

upon the fact that colloidal albumin will not diffuse through a membrane, while peptone and amino acids, which are split products of protein, will diffuse.

If a serum containing ferments specific for a tissue is placed in a dialyzer with the tissue, the ferment will digest the tissue and its split products will pass through to the distilled water surrounding the membrane, which water is tested with ninhydrin for peptone and amino acids.

Ninhydrin is a chemical reagent for testing dialyzation products.

The study of cell ferments is an important work. It brings forth many great investigations, in the line of immunity. As to their chemical nature nothing has been found, but they are regarded as albuminous substances, their functions being specific and fairly well known.

Ferments are of cellular origin, they may be soluble or extra cellular, and insoluble or intra cellular. The extra cellular ferments are those that are destructive in their action; they split complex protein molecules into simple protein molecules. The function of the intra cellular ferments is that of construction, they are cell builders. They build up specific proteins. They convert the raw material brought them into specific proteins.

The parenteral proteolytic ferments are of two kinds, non-specific and specific. The non-specific are normally present in the blood and tissue. In different species of animals the non-specific ferments differ. Their purpose is to break up foreign proteins that find their way into the blood and tissues. The specific parenteral proteolytic ferments are not normal products of the body cell, but are brought into existence under the stimulation of those proteins introduced into the blood stream and tissues, which on account of their nature, or amount, escape the action of the non-specific ferments. A protein introduced into the blood and not promptly and fully digested by non-specific ferments is discharged from the blood current and deposited in some tissue, the cells of which after a time develop a specific ferment which splits up this protein.

Every living cell in the animal body elaborates its specific ferments. This has been demonstrated positively by Jacoby and Richel who showed that the liver cells elaborated a specific proteolytic ferment; and Abderhalden showed by an optical method that he could digest liver tissue with liver peptone, but

not with peptone from kidney or thyroid. And thyroid tissue would be digested with thyroid peptone and not with liver or kidney peptone.

The proteins which are taken into the alimentary canal are acted upon by digestive juices. When the peptone stage is reached, the product becomes poisonous, should this be absorbed into the circulation, injurious condition may result, but when the digestive process proceeds and the peptones are broken into harmless amino acids, these acids are absorbed, synthesized into the proteins of the body.

Abderhalden has shown by dialysis and by the polariscope that foreign proteins injected into animals are digested by ferments. It has been suggested that the cells of the chorionic villi, from time to time become dislodged and thus enter the maternal blood. These cells being active, a certain overproduction and overflow of a new albumin takes place and a pregnant mother will exhibit in her blood serum a ferment which is capable of splitting placental albumin and this only. The same theory may hold good in cancerous patients. When cancer cells multiply so as to form a tumor and the body proteins are unable to combat the disease, the cancer cells enter the blood stream—being a foreign protein,—a ferment is formed which is specific for them, and is capable of splitting only cancerous albumin.

Preparation of cancerous albumin.—All growths shown to be malignant by the microscope, such as carcinoma of breast, tongue, rectum, and scrotum were used. They were cut in small pieces free from fat and placed in a wash bottle with running water to be freed from blood. After washing for 24 hours, they were placed in 2 liters of water to which was added a few drops of acetic acid, they were then boiled for one minute, the water was drained and the tissue reboiled in water for five minutes. Five c.c. of this boiling water was tested with 0.2 c.c. of 1 per cent. solution ninhydrin. If soluble proteins were present it was indicated by a blue color, the process of changing the water and boiling was repeated until a negative result was obtained, which was indicated by a clear or yellowish fluid, resulting after the ninhydrin test.

The tissue was placed in a large mouth bottle containing chloroform water and the whole was covered with toluol and kept in a cool place.

Obtaining blood serum. The blood was obtained as for a Wassermann test. The serum was centrifugalized at once or

left standing until it clotted out and the serum drawn off. The serum must be free from haemoglobin with the addition, that the patient has had no food for six hours. Serum drawn at the time of food absorption contains some amino groups that are readily dialyzable.

Dialyzing apparatus.—Parchment tubes or thimbles were used. Each tube was tested as to its impermeability to albumin and permeability to peptone. After being tested, they were kept in chloroform water, covered with toluol.

All glassware, such as pipets, test tubes, dialyzer containers, were made perfectly sterile in the following way: They were first placed in 20 per cent. solution of antiformin for fifteen minutes—then washed in water to free them from antiformin, followed with alcohol and ether and placed in hot air box to a temperature of 165° F.

The Test.—All the thimbles to be used were placed in boiling water for twenty-five seconds, then placed in a sterile dialyzer container. In each thimble was placed 2 c.c. of serum free from blood. In the dialyzing containers were placed 25 c.c. distilled water, which surrounded the thimble. The containers were kept in an incubator for six hours, at the end of that time, 5 c.c. of the dialysate was placed in a test tube to which was added 0.2 c.c. of 1 per cent. solution of ninhydrin, and boiled continuously for one minute. If a negative result was obtained indicated by colorless solution or yellowish, the thimble was used for further testing. If positive result, indicated by a blue or violet color, the thimble was discarded. After having negative thimbles the test was carried on further.

Each set, that is a normal serum and the serum to be tested was divided—if by chance there were four negative normal and four negative test serums, three of each set received a piece of cancerous tissue, the fourth receiving no tissue. A layer of toluol was added to the surface of the thimble contents and the surface of the distilled water. They were placed back in the incubator for 16 to 24 hours, including the six hours. At the end of the expired time the containers were removed from the incubator and tested in the same manner as stated before.

The four dialysates from the normal case were to be negative also the one containing no tissue from the tested case. The three from the tested case, to be positive were to show a blue color, if they showed no blue color and were somewhat yel-

lowish they were called negative compared with the normal case.

The number of tests I have been able to examine were in 33 cases, consisting of the following: Ten cases of carcinoma and 23 cases non-malignant. Nine of the cancer cases gave a positive reaction, one a negative. It is interesting to note that the case which gave a negative reaction was from a case with advanced epithelioma of the right breast. Brockman throughout his work upon serodiagnosis of malignancy noticed that, patient with growth and in low state of health would fail to give a strong positive in 12 hours.

Herman and Fritsch noticed the same in three advanced cases which gave a negative result.

Of the twenty-three non-malignant cases, seven gave a positive reaction and sixteen negative reaction.

Brockman reports twenty-five carcinomatous cases; all gave positive reactions, twenty non-carcinomatous, all negative reactions.

Ercicum applied the test in forty-two patients. All malignant gave positive and all benign gave negative.

Von Gambaroff reports that in fifty cases of malignant tumors the reaction was positive in forty-nine.

Abderhalden stated that fifty carcinoma sera examined in his laboratory all gave positive reactions.

Halpen applied the test in 102 cases of carcinoma, 30 gave positive reactions, and five gave positive of 19 cases of sarcoma.

Ball, in his series of 100 cases upon pregnancy and cancer, found pregnancy cases gave positive cancer reactions and cancer cases gave positive pregnant reactions.

Leitch reports 100 cases tested, 51 were cancer and 49 were non-malignant. In the 51 cancer cases positive result was obtained in 28 and 49 non-cancerous controls positive results were obtained in 18.

My findings led me to conclude that the sero diagnosis of malignancy must be modified in the technique before it can be of real clinical value; then like the Wassermann test for syphilis it will be a great help to the clinician in making his diagnosis.

THE RELATIVE MERITS OF VARIOUS LABORATORY TESTS AND MEALS IN CASES OF ACHYLIA GASTRICA.

BY

C. H. GRAY, M.D., PHILADELPHIA.

THE normal gastric juice of man contains about .2 per cent. of Hcl., and the gastric juice as it flows from the glands possesses a constant acidity. There are variations, however, due to the length of time the juice was in contact with the alkaline mucosa of the stomach. One observer declares that the juice, as poured out by the gastric glands, has an acidity of about .5 per cent. This secretion is rapidly neutralized through the regurgitated duodenal juice especially the pancreatic juice.

The examination of the empty stomach in a case, revealed 12 hours' retention (here the remains of green vegetables were given), and the specimen at 1½, 1¾, and 2 hours showed definite amounts of free fat. The diagnosis of stenosing ulcer of the duodenum was made and an operation revealed the correctness of the diagnosis.

Another patient complained for several years of a severe pain after eating, and on the supposition that ulcer was present, operation was performed but no ulcer was found. The operation failed to relieve the pain and in addition the patient had occasional attacks of hyperacidity. The pain was particularly pronounced after bowel movements or anything that decreased intra-abdominal tension and permitted the stomach to sag. The history of the case was more or less typical of ulcer, although the pain was explained by one physician to be due to adhesions, and this was substantiated by the intermittent character of the pain, independent of meals. Although there was sharp pain shortly after the ingestion of food, an examination of the empty stomach showed no retention, but a very large liquid residue, a fasting hypersecretion. An Ewald meal was given: digestion was over in normal time and there was no retention, no mucus, no bacteria, no occult blood. In this case examination of the stools, cytologic examination of the gastric contents and a study of the albumin content, were all against the probability of ulcer. X-ray findings indicated a spastic hour-glass contraction with ulcer on the lesser curvature; this should have been accompanied by pylorospasm and delayed

motility especially with gastric ulcer, which was not found. The diagnosis of ulcer, pylorospasm, possibly fissure of the pylorus and adhesions, was made. Operation was performed and the only finding was adhesions causing a transverse constriction of the organ. This case illustrates that negative cytologic, chemical and occult blood findings in the presence of hyperacidity and hypersecretion, indicates usually an extrinsic cause.

By means of the fractional method it has been demonstrated that there is the secretion of gastric juice of constant acidity in the human stomach. This is true in both normal and pathologic stomachs. The low acid figures at the beginning are due to the lessened velocity in the formation of acid during the beginning of digestion,—the partial neutralization of the newly formed acid by the mucosa and the neutralization and fixation of the acid by the proteins of the bread. The lessening of acid toward the end of digestion is due to the accumulation of inhibitory and sedative substances which tend to lessen acid formation, and a partial neutralization by the food of the acid already formed.

Wolff-Junghaus Reaction:

It was found that after an Ewald test breakfast, the filtered stomach contents withdrawn in one hour, showed only a faint trace of albumin in benign achylia gastrica, whereas in the achylia with a carcinomatous basis the percentage of albumin was as great or even greater than in normal cases.

The test consists of making six dilutions of stomach contents: 1:10, 1:20, 1:40, 1:100, 1:200, 1:400. Ten c.c. of each dilution is placed in a test tube and the reagent is superimposed 1 c.c quantity in each tube.

Reagent:

Acidi phosphotungstic, 0.3.

Acidi Hcl. pur. 1.0.

Alcohol (96 per cent.) 20.0.

Aquae dest, q. s. ad. 200.0.

In *benign* cases albumin is rarely found in dilution *above* 1:100.

In *carcinomatous* cases albumin is rarely found in dilutions *below* 1:100.

Conclusion: In cancer the juice contains more *soluble* albumin. An Ewald test meal is given of 50 gm. of bread and 300 c.c of water and removed in 60 minutes. Filter and use fil-

trate in dilutions of from 1:10 up to 1:400 to 10 c.c. of each dilution. Add 1 c.c. of the reagent by stratifying it on the diluted juice and you get an *albumin ring* up to 1:100 in normal cases. In dilutions above 1:100, if albumin ring is present it would suggest the possibility of cancer. Dr. Vincent Lyon has been experimenting with gastric sedimentation. Pumping out the stomach you first get a clear fluid then a turbid one. This he places in a centrifuge and takes the residue and puts it in gauze and hardens it with bichloride of mercury 1:1000 or formalin 10 per cent. and makes paraffin sections of the same. Pieces of tissue and gastric mucosa undergoing *malignant* degeneration can be detected in this way.

Wolff-Junghaus Test: Smithies, of the Mayo Clinic, in 147 cases of gastric carcinomata, found soluble albumin more constant than absent, Hcl. and lactic acid and the glycytryptophan test, and more constant than tests for occult blood, and the demonstration of gastric inefficiency (motility). In extragastric malignancy, gastric syphilis and nephritis the test is inconstant. As a means of differentiation between malignant and non-malignant conditions, when used in connection with other clinical and laboratory data, it is of considerable value. Simple gastric and duodenal ulcer, especially when accompanied by pyloric stenosis or gastric atony, may give confusing response to the Wolff-Junghaus test. The presence of blood in the gastric contents may be a factor in the production of certain atypical positive tests.

Colloidal Nitrogen: 100 c.c. of a 24-hour specimen of urine freed of albumin are saturated with zinc chloride and allowed to stand for twenty-four hours. The mixture is filtered and the residue on the filter paper is washed five times with saturated zinc chloride. The filter paper and the ppt. are examined for colloidal nitrogen. The total nitrogen is also determined in the same urine and the two compared. In health C. N.: T. N. equals 1:32, while in cancer the ratio equals 4.08 and above. This test is not specific for carcinoma.

Solomon Soxh Urine Sulphur Tests. Pasetti applied this to 200 cases, including forty-six cancer cases, thirty-five surgical, Tb., ninety-two of other surgical affections and twenty-seven of syphilis (positive Wassermann reaction). Among the latter it was negative in all but two; in surgical tuberculosis, negative results in over 88 per cent.; while the reaction was constantly positive in 68.7 per cent. of carcinoma patients, and

in 35.7 per cent. of the sarcoma cases. It is so frequently positive in cancer and negative where there is no malignancy, that Paretti regards it very highly in differentiation of malignant neoplasms.

Meiostagnin Reaction (Ascoli Test). With this reaction 96.8 per cent. of all carcinoma patients give positive results, but a large percentage of other diseases give positive findings, viz.: Chronic osteomyelitis; certain constitutional diseases, like diabetes sarcoma, and pregnancy give varying results; negative findings would speak against the possibility of carcinoma, but this does *not* apply to sarcoma, while positive tests are of little value.

Epiphanin Reaction (Weichardt's Test). This test devised for the detection of specific antibodies seems to be negative in the majority of non-carcinomatous cases and positive in about 81.5 per cent. of all cases of malignancy.

Edectin and Pepton. The use of these two substances in differentiating and estimating the proteolytic and peptolytic cleavage, has been suggested by Friedmann and Hamburger. Two c.c. of the edectin solution (0.1 per cent. solution in 0.1 per cent. sodium carb.) are placed in each of four test tubes and the neutralized gastric filtrate added in decreasing amounts of 2 c.c., 1 c.c. and 0.5 c.c. respectively, to the first three tubes, the fourth containing edectin and carbonate alone ($n=100 \text{ Na}^2 \text{CO}^3$) serving as control. All four tubes are made up with an equivalent volume with a 1 per cent. carbonate solution, placed in an incubator at 37°C . and allowed to remain four hours. Proteolysis is estimated by the precipitation of unhydrolyzed edectin by the addition of five per cent. acetic acid. Complete absence of cloudiness after neutralization indicating the complete digestion; slight turbidity, partial digestion; maximum turbidity as compared with the control—no digestion.

The estimation of peptolysis is performed as follows: 10 c.c. of the gastric filtrate are added to 20 c.c. of a 2 per cent. solution of pepton and 10 c.c. of the mixture used as control and triturated for free amino groups by the formal method. The remaining 20 c.c. are placed in an Exlemeyer flask under toluol at 37 degrees C. for twenty-four hours. At the end of this time 10 c.c. are removed and titrated, the difference between the control tritration and the second tritration expresses the degree of peptolysis in terms of c.c. $n=10 \text{ Na O. H.}$ per 100 c.c. of the mixture. Moderately advanced and advanced cancer of the

stomach involving the pyloric portion associated with low acidity and low or absent free Hcl., produces the greatest peptone cleavage. Early cancer situated on the lesser curvature between the pylorus and cardia, possibly developing on an *ulcer* basis, with high total acidity and low or absent free Hcl., gives the least. In chronic ulcer of the stomach and duodenum there is practically no proteolytic or peptolytic cleavage. According to the authors, the edectin-pepton method possesses a distinct value in the diagnosis of the stomach and serves well to distinguish between benign and malignant acidity. High peptolysis with low proteolysis speaks for *carcinoma*; high proteolysis against *malignancy*. The authors are wise in stating that the test has a practical value only when taken in conjunction with the usual clinical and laboratory data.

Glycyltryptophan Test. A recent article by Hanschild shows that the test has too many sources of error and is too difficult to have much value. It is utterly useless as an early sign of carcinoma and even in advanced cancer its value is problematical. This test, like so many others, has been studied with a view of early diagnosis of cancer of the stomach and will soon take its place with abandoned "early tests."

Salomon Soxh Urine Sulphur Test. Dilute 150 c.c. of urine with 100 c.c. of distilled water (albuminous urine must first be boiled with a small quantity of acetic acid and carefully filtered), then add 150 c.c. Salkowicky's barium solution (a mixture of two parts of barium-hydroxide solution saturated at room temperature) with one part of barium chloride solution. Filter, and to the clear filtrate add more reagent to insure complete precipitation; then the ethereal sulphates are removed from the entire filtrate by adding 30 c.c. of Hcl., transfer to the 500 c.c. flask, covering with a small heated funnel and heated to boiling point on an asbestos mat, with a small flame for one hour. The flask is then covered with a beaker and allowed to stand on a water bottle till the supernatant liquid is clear (requiring from four to twenty-four hours). Now filter twice through a double barium filter, small; wash the flask with sodium hydroxide solution and distilled water; boil again and use the same precautions as before and filter through a double barium filter. Now treat 200 c.c. of the filtrate with 3 c.c. strong hydrogen peroxide solution (perhydrol merck.) and boil fifteen minutes, covering again with the funnel in the same flask. Now the liquid is poured into a sedimentation

glass and then observed in from one half to four hours. In cases of carcinoma a decided sediment will be observed while a normal urine may show a trace of such a sediment; as a rule normal urine does not show a sediment in four hours; but, some time later, a trace of ethereal sulphate not properly removed as above may show. The sediment obtained in cases of carcinoma is usually somewhat colored, but this color can be removed by alcohol-ether.

TEST MEAL.

Test Breakfast of Ewald and Boas. For noting change in secretion and motility: It consists in eating a roll (water roll) or two slices of bread (white), weighing about thirty-five gm. and the drinking of one and a half tumblerfuls of water or two cups of tea without milk. This is best taken in the morning on a fasting stomach and is extracted at the height of digestion, which is about one hour later, although, of course, any other time of the day may do. Observing that tea instead of water was commonly being used, from a series of cases having normal gastric secretion, the figures showed in twenty-seven test meals from eleven individuals, that when tea was used the Hcl. secretion ran from 5-9 per cent. higher than when water was used. Water is, therefore, more accurate in determining the gastric secretion. The range of normal amount of return is between 20 and 70 c.c. Increased amounts above 70 c.c. are just as significant of gastric disturbance as 20 c.c. or less these amounts. Of course we assume that the stomach has been emptied at the time of extraction. Increased amounts are usually seen when there is increased amount of secretion of gastric juice from any cause. When in stagnant conditions, contents had been present in the stomach before the meal had been taken, in hypermotility and in spasmed and stenotic states of the pylorus. Among such conditions may be mentioned marked hyperchlorhydria, and gastrosucchorrea in primary myasthenias, in pyloric stenosis both benign and malignant; in asthenic states of the musculature from reflex or from direct neurotic or nutritional causes and in pylorospasm, etc. Low amounts of returns are seen in hypermotility from local or constitutional reasons, asthenic disturbances of the normal pyloric reflex and in more or less constant relaxed states of the pylorus.

Test Dinner of Leube-Riegel. The so-called "mixed meal" consists of a plate of beef broth (about 400 c.c.), a large portion of meat (preferably beef, about 150 grms.), puree or mashed potatoes (50 grm.), and a roll of wheat bread. The time for its removal is three or four hours after ingestion, when it is examined as to its chemical nature, and particularly as to the amounts and condition of the food in regard to their extent of digestion.

The use of this meal is of value in the accurate diagnosis of stomach conditions even more so than the test breakfast. This is because of the character of the meal and the fact that meat takes longer time to leave the stomach than only the wheat bread of the Ewald meal. As standards for estimation, we consider the simple test breakfast should leave the normal stomach in about two hours. And because of the addition of potatoes, the quantity of carbohydrates in the mixed meal is about doubled, and that this, therefore, might delay its total exit to a slight extent (although usually not more than two hours longer than when this quantity of carbohydrate is taken alone); that a plate of beef broth should have left a normal stomach in about three hours and that the meat itself should be out in three or four hours' time, and in a normal stomach should surely occur within five hours.

Remnants of food may be present even in a perfectly normal stomach six or seven hours after ingestion. If, at the end of eight hours after taking the mixed meal, considerable quantities of the meal constituents are obtained from a stomach, the existence of the following conditions should be considered, namely,—pyloric obstruction, states of atony, a combined atony and obstruction. On the other hand, when the secretive power of the stomach is low or absent in the simple meal, the employment of the mixed meal may be of service before diagnosing late atrophic gastritis, nervous achylia, or malignant disease. This is a very important fact.

The Lactic Acid Free Meal of Boas. Since all breads, rolls, etc., contain more or less milk, for the purpose of testing for lactic acid which is generated in the stomach, the non-lacteal test meal of Boas answers admirably and is deserving of more general use. While the presence of lactic acid in the test meals is indicative only of gastric stagnation, and low or absent secretion and not at all primarily of cancer—unless the growth has in a secondary sense caused those conditions,—still, the genera-

tion of lactic acid in the stomach is of much significance, particularly when the suggested lactic acid free meal is employed in the examinations. Among such conditions may be mentioned, in addition to cancer of the pyloric region and the pylorus itself, the various other causes of pyloric stenosis such as the contraction of an ulcer cicatrix, chronic ulcer with much organization of fibrous tissue, hypertrophic stenosis, perigastric bands, pressure on the pyloric region by extragastric formation and well marked chronic gastritis.

The test meal consists of about 200 c.c. (7 oz.) of thin, well cooked oatmeal porridge, which is prepared and served without milk, cream or sugar and is extracted in one hour after its ingestion. It is preferable to wash out the stomach the evening before and not allow the taking of milk or milk containing foods, for at least twenty-four hours before its extraction. The patient should eat a full meal in the evening and then wash out his stomach the following morning—about ten or twelve hours afterward. Should the patient not have vomited during the night and food remnants be found in his stomach in the morning, bona fide pyloric stenosis can almost invariably be diagnosed.

The Mayo method is also good. Eating raisins or prunes in the late evening and noting if their skin or seeds are obtained in the morning lavage water.

A FEW NOTES ON CIRCUMCISION.

BY

J. A. BURNETT, M. D., HARTSHORNE, OKLA.

THERE is good authority to prove that circumcision of both male and female is often needed. I will offer the following as such proof:

Dr. W. E. Ashton, in his work, "A Textbook of the Practice of Gynecology," 3d edition, 1907, says: "Adhesions are quite common in new-born children." Again in regard to prognosis of adhesions of the clitoris he says: "Adhesions of the clitoris are readily cured by proper treatment. Adhesions retard the development of the clitoris, and unless they are broken up the organ is apt to be undersized."

In the *Therapeutic Record*, February, 1914, Dr. B. E. Dawson has an article on "Circumcision in the Boy and Girl as a Therapeutic and Prophylactic Measure," Dr. Dawson says: "A prepuce should be free from adhesions to the glans and corona; it should extend no further than the point of the glans penis; it should form no constriction upon the glans; it should be retracted easily without pinching; there should be no thickened ring around its margin. Otherwise surgical interference is called for. The hood should not cover the glans of the clitoris, at least one third of the clitoris should be exposed; it should be free from adhesions and smegma beneath its folds; it should be easily and freely retracted without constricting the clitoris; it should not be so redundant as to fold over laterally. Deviations of the standard here given need attention. This work is called for in girls as urgently as in boys. I have circumcised all ages from infancy up to old ladies and with good results. A small meatus or a short frenum in the male will produce reflexes as disastrous as those caused by a long or tight foreskin."

In the *American Journal of Diseases of Children*, August, 1914, Dr. R. G. Freeman has an article on "Circumcision in the Masturbation of Female Infants."

In this article Dr. Freeman reports one case as follows: "A child aged five years had weighed only five pounds at birth, but had done well until she was eight months old, when she contracted a colitis followed by the condition known as infantilism of Herter, from which, however, she recovered again in the course of a year. She was a frail, nervous child, and it had only recently been noticed that she masturbated. A partial separation of the adhesions without an anesthetic did not remove the habit, so a circumcision was performed under anesthesia and she has never been known to masturbate since, although five months have elapsed since the operation."

Dr. J. H. Greer has an article, "Phimoses and Circumcision," *Journal of Sanative Medicine*, June, 1910. In this article he says: "Nine men out of every ten who apply to physicians for treatment have long foreskins. If every one was circumcised there would be only one case where ten now exist. Think of the good that would result to the world at large should circumcision become universal. Insanity, locomotor ataxia, and hundreds of obscure mental and nervous diseases would almost disappear. Think of the value to the unborn, the misery that could

be saved those who are yet to come. Surely it is worth trying for. As physicians, the task before us is great. We must educate, educate until the world sees the good that we are trying to do.

Again, Dr. Greer says: "In forty-six cases of amputation of the penis, thirty-five had phimosis. Demarquay reported fifty-nine cases of cancer of the penis in his practice, of which forty-two had phimosis. Travers says that he has never seen cancer of the penis in a Jew. The last statement I fully coincide in."

In this same article Dr. Greer reports a case, the face covered with acne in a man 28 years old. He had been treated for six years by physicians, thinking this was the trouble. He was circumcised and in two months every pimple had disappeared. Another case reported by Dr. Greer was a case of nocturnal emissions with bad dreams. In three months after circumcision there was a complete cessation of the emissions and dreams. Previously they had been of nightly occurrence.

In regard to this case Dr. Greer said: "This case illustrates how useless are drugs and medicines to counteract a condition caused by a physical deformity."

The patient had phimosis which is the physical deformity Dr. Greer alludes to. In discussing Dr. Greer's article Dr. Schaare said: "One child was brought to a clinic who was suffering with strabismus. The boy was circumcised and in ten days the eyes straightened without an operation for cross-eye."

In "Orificial Surgery" by B. E. Dawson, Dr. Weirick reports a case of partial atrophy of optic nerve in a man aged 34 of eight years' duration who could only read large print and then only a few minutes at a time. In one month after operation on the prepuce he could read a page of small print without any unpleasant results.

Another case reported by Dr. Weirick was a child 18 months old; an idiot which got all right in two months after circumcision. He stated that there was marked mental improvement during the first week following the operation.

In Dawson's "Orificial Surgery" Dr. J. W. Meaus reports three cases of acne vulgaris that was cured in one month by removing contracted prepuce and inserting metallic sound.

Dr. G. E. Starnes, in March, 1905, *Medical Era*, reports a case of a boy 12 years old who had been treated four or five years by as many different physicians for diabetes melitus

without results. He had wet the bed every night from infancy and had St. Vitus dance. He was circumcised and never wet the bed after the operation and has had no trouble with his nerves since.

I trust these few notes on circumcision will cause some physicians to pay more attention to this important subject.

SOME NEW RESEARCH WORK ON CANCER.

BY

S. R. KLEIN, M. D., PH. D., NEW YORK CITY.

THE literature on cancer during the past few years has been so enormous that it is hard to say to which point should we direct our attention. Under any circumstance, it is my idea that we must accept the parasitic origin of the disease. There are, of course some very resembling cells which remind us of the mesodermic cells of the embryo. I made nearly a dozen experiments in this line in the laboratories of Fordham University two years ago, and very successfully. But the parasitic theory is more accessible than any other.

Ford Robertson and Wade (*Lancet*, p. 469, Vol. II) described bodies like the plasmodiophora brassica, which is known to cause tumor in cruciform plants. These are only demonstrable by special metallic processes. In a later paper they describe the technique and also methods of culture which they maintain were successful and discuss the probable etiological relationship of these parasites to carcinoma. The tendency of other observers was to regard these bodies as cell inclusions. Ford Robertson and Young (*Lancet*, p. 1, 359) however, deal with cyanide fast bodies in tumor cells and describe improvement in the technique of preferring and hardening tissues by their special processes. They also note a great activity of polymorphonuclear leucocytes which they believe to be divided against a specific parasite.

Robertson also describes rod-shaped bodies, something like tubercle bacilli, but evidently not bacteria, in certain carcinomata. These bodies are a stage in the life history of the pro-

tozoon and several allied species are concerned in cancer production.

For some time interest was centered around the micrococci neoformans at Doyen; but it is an organism at law pathogenically only and the serum of patients suffering from cancer does not develop any very marked agglutination properly of this micrococcus.

I should mention here the work of Gaylord and Calkins (*Journal of Infectious Diseases*, p. 155, Vol. IV) who found a special spirochaete and microgyrata in primary and transplanted carcinoma of the breast of mice. It does not stain by Giemsa.

I made a few experiments with the trachiocephalus trichiurus, which was found in 90 per cent. of cases of appendicitis by some research workers, as Weichselbaum, Congern, Kuthy, Babes and I found that it has some pathogenic influence of producing carcinomata. In some cases (animal experiments) was reached a remarkable point where horrific increasing of leucocytes was found.

Brand advances many suggestive points, especially on the infectiousness and autoinoculability of cancer and points out that it is impossible for the carcinoma cell "to be a true parasite as suggested by Butler." He recommends the examination of fresh living carcinoma cells in the warm stage of the microscope, and suggests that the new device of Gordon, which enables a good magnification of 7,000 diameters to be obtained, and the system of dark field illumination introduced by Siedenhopf, may greatly facilitate cancer research.

Among the capitals of Europe, Berlin is suffering most of all from cancer. Professor Baron von Dungern found that even the animals are the greatest sufferers out of all in the Eastern Hemisphere. Nearly one hundred dogs out of ten thousand have cancer in Berlin. Cats, pigs, cows are far behind that percentage in number. It is also certain that human beings are mostly suffering from malignant disease there, where they eat many eggs. It is hard to say why.

SOME EXPERIENCES WITH TUBERCULIN.

BY

J. W. CRAWFORD, M. D., NORTH ADAMS, MASS.

(Read before the Worcester Branch of State Homœopathic Medical Society).

HELEN P. was one of five children. Her father died of pulmonary tuberculosis; her mother is said to have had the same disease, although she died of acute heart trouble. At eighteen years of age Helen developed tuberculosis of the lungs, characterized by the usual symptoms, with a positive sputum. She was admitted to a State Sanatorium—the diagnosis fully verified and because of her advanced condition, was given absolute rest. Was in bed for three months, during which period her disease followed the usual course of events with periods of aggravation, that on several occasions threatened her existence. Gradually the severity of the invasion spent its force and she was allowed to strive for a more active life. At the end of a year, it was deemed best for her to go home, although no hope was entertained for her recovery either by her physician or relatives, in fact, when discharged from the Sanatorium with forty-nine others, apparently cured and arrested cases, she was considered the “black sheep of the flock,” and the superintendent in charge so stated to her people, and added: “In my opinion, two years at the longest will see the end.” At home, she strove to carry out the treatment as taught her at the Sanatorium, also guided and watched by the family physician, during a period of one and a half years. At the end of which time her physical status proved most unassuring. Thus, after two and a half years of active, open infection, this case presented the following: Cough, positive sputum (2 oz. in 24 hours), temperature range 97—6 A. M., 101—6 P. M. Pulse 88-96-102. Respirations 28-38. Night sweats, dyspnoea on least exertion, nausea, anorexia and a markedly toxic appearance. That she was totally discouraged need hardly be remarked. In sheer desperation she began the tuberculin treatment and has since said, “with absolutely no faith or hope that it could possibly help her.”

I will not tire you with the details of her case during the following three years, only to say that after six months the change for the better was so marked the patient was unable to believe her own feelings. Thus, after three years she became appar-

ently cured, with the cessation of all symptoms and physical signs. At this juncture she married, and as is usually the case, became pregnant. Of course, I looked for defeat, but as the weeks passed into months and nothing out of the normal appeared, I took heart, wondering, however, what the stress of labor might mean to the scars of the lung tissue. She came to term most gracefully—the onset of labor progressed normally. There were no signs of air hunger or dyspnoea, no weakness. The position developed a persistent occiput posterior, which necessitated the giving of chloroform, and the application of forceps, both of which she withstood normally. A normal child, weighing $8\frac{1}{4}$ pounds was delivered. Her breasts were immediately placed under pressure to suppress the milk and the child nourished by bottle. The patient made an uneventful recovery, her temperature never going above 99, and she left the hospital at the end of the second week. At this writing she is in apparently perfect health, weighs 154 pounds, cares for her child, husband and home. The baby weighs at seven months, 16 pounds, and is well and strong. This patient returned to the Sanatorium four times during the three years for examinations. She has kept a record of the other forty-nine patients discharged with her, and to-day all are dead; but one.

Miss H., school teacher, age 22—pulmonary tuberculosis, sputum verification, spent one year in a State Sanatorium, discharged improved, but unable to teach. Chief symptoms: cough, expectoration, debility. Began tuberculin, with marked benefit after six weeks. Took special studies in Normal school, which she completed and after one year's treatment began teaching, having forty-four pupils under her care. A year ago was in good health, and so pronounced by the examiners of a State Sanatorium.

Mrs. H., age 24. Spent three years in Sanatorium and hospitals for the treatment of a running ulcer of the right thigh, pronounced tubercular by one of Portland's leading surgeons, had undergone three operations. In one year, tuberculin cured this case, with complete return of function, and after four years she is absolutely well and able to pursue her usual duties.

Miss X., school teacher, age 46. Pulmonary tuberculosis, sputum verification, pronounced incurable, came under my treatment three years ago, weighed 102 pounds, height 5 feet 6 inches. Presented all the usual symptoms of these cases. Present status: 80 per cent. improved, expectoration none, cough

slight, temperature range 98-6, 99-4. Pulse 88-92. Respiration 18-22. General appearance good. Weight 179 pounds. Believe she will make a good recovery.

Mr. H., 50 years, blacksmith by trade, disseminated type, probably due to emery dust. Spent one year in State Sanatorium, discharged improved but unable to work. Cough, expectoration, temperature, sweats, debility. After nine months of tuberculin is apparently cured, physical signs negative. Says he could do his regular work now if I would consent. Asked him how he knew. He replied, "By my feelings; never felt better in my life." Present status: Physical signs, normal. Temperature, 24 hours, normal. Sputum, none. Cough, none. Sweat, none. Went to Sanatorium several months ago for re-examination and was told it was remarkable the improvement he had made.

CONCLUSION.

1. The tuberculin given these cases was derived from three sources: Tubercular human lung; tubercular bovine, lung and glands; tubercular turkey's liver, all verified by microscope.

Saturated glycerine extracts were made of each and the same attenuated according to the decimal scale.

2. Sugar discs were moistened and given with the attenuation by mouth. (Am fully satisfied this most potent and powerful toxin is not affected by fluids of the gastro enteric system.) J. Solis Cohen, of Philadelphia, recently stated same and advises the oral administration.

3. Believing the human race is infected by the various forms of tubercle bacilli (which in time may be known to have sprung from a common ancestor) their morphology dependent upon the conditions encountered in the host during the latent period of immunity and that the great destruction wrought in the tubercular lesion by the streptococcus, staphylococcus, pneumococcus and various other unclassified bacilli led me to develop this mixed toxin, if you please, which has demonstrated its peculiar adaptability to the varied types of this disease.

4. That under its influence, the sputum passes through an objective and microscopic change which bears out the statement. After about six weeks to two months, this substance loses its greenish and yellowish color, decreases in amount, becomes frothy, aerated and tasteless. Microscopically a marked de-

crease in the strepto., staph. et pneumo cocci. The tuberculin bacillus loses its protoplasmic granules, shrivels its membranes, becomes thread-like and decreases in numbers. The cough, of necessity, improves.

5. Constitutional changes, although gradual, are marked. First, the patient begins to lose the yellow tinge of skin and soon it is apparent the hemoglobin of the red cell has improved. Second, improvement of appetite and sleep. Third, Increased weight and strength. Fourth, general desire to be more active. Fifth, general physical signs abating, with a surprising amount of recovery of lung tissue, as the inflammatory zone surrounding the tubercle or cavity is absorbed.

Finally.—Members of the homœopathic school, let us rise to the dignity of our heritage! Men of our own school had priority in their provings and clinical verifications of this powerful poison. Years before bacterial organisms had been isolated, classified and pathogenically associated to man and their immunizing end products determined chemically, e. g., antigens, precipitins, agglutinins and opsonins, our forebears with their keen foresight, understood and recognized the curative and negative factors connected with this group of substances, thus preceding Wright in his theory of anaphylaxis or negative phase.

Nor allow the spectre of infinitesimal to deter you. LISTEN, "No one in this country has had so much experience with tuberculosis as Tradeau of Saranac Lake. No one has tested so critically and cautiously the merits and demerits of this remedy. As a result of fifteen years' experience of its use he published last August an account of his methods. WHAT DOES HE USE? Not the ten milligrams as employed in the early nineties, not even one milligram, or one half milligram. At present, he begins in afebrile cases with one ten thousandth of milligram, in febrile cases one one hundredth thousandth milligram. This one one hundred thousandth of a milligram, when injected under the skin in a centimeter of water and absorbed into the circulation, becomes diluted 5,000,000 times by the body fluids. Hence, we imagine the original milligram of tuberculin acts in a dilution of 1,500,000,000,000. Precisely the homœopathic principle, namely, to produce a definite good effect without observable ill effects.

THE PRESENT DAY STATUS OF HOMEOPATHY.

BY

JOHN BESSON, M. D., PORTLAND, OREGON.

(Read before the Thirty-eighth Annual Meeting of the Homœopathic Medical Society of the State of Oregon.)

WITH three or four exceptions, the entire realm of curative therapy is exemplary of homœopathy. Here, in Portland, just three months ago, E. A. Pierce (old school) in his article, "Autoserotherapy," shows that method of cure of non-purulent pleural effusion to rest on the homœopathic principle of raising the vital force with the most similar remedy; I say "shows," for he expresses it in different language.

Duncan, of New York, has delved further into autotherapy, curing all sorts of pleurisies, infections, etc., from which a discharge or exudate may be obtained for administration per os or with which to make a filtrate, furnishing the similimum, if you please, which cures, to use Duncan's words, by raising the power of the blood serum and by stimulating the activity of the leucocytes.

The pharmaceutical houses and the laboratory men knock this method and say, "unscientific," for it means the ruin of their vaccine business. Being not even subject to the possibilities of alteration or contamination as in the production of an auto-genous vaccine, either the dose by mouth or the direct filtrate of Duncan, in the superlative degree, individualizes the case; treats the patient. "Nature's method," Duncan calls it. Improved Homœopathy, I call it, for it furnishes the simillimum every time and closer even than our repertories, since use of the latter is subject to the rule that to err is human! Always bear in mind, please, that the simillimum is something nearest to that something causing the disease, yet without being identical. However, Duncan, and he's a homœopath, tells me he finds the thinkers among the old school men quicker to accept autotherapy than our men. Some of our "big" men fear that it will hurt homœopathy! Think of that!

One cannot hurt truth and I have called his method Improved Homœopathy, let's say Nature's Homœopathy, and I would suggest to you that the homœopathicity of drugs is synthetic homœopathy. Given a patient sick of something, (anything not

presenting an exudate or pus from which to make his natural simillimum) you can see that if you know enough about drug pathogenesis, enough of the picture presented by the patient, and yourself are enough homœopath, you may select a synthetic simillimum for him, similar enough to raise the power of his blood serum, or whatever you choose to call it, sufficient to cure.

This new homœopathy is an easy homœopathy and in its very simplicity rests its accuracy. Nothing can ever replace our old homœopathy; there are still many fields for the competent prescriber to exercise his art, but when Nature offers you a simillimum even more perfect than you may otherwise select, don't neglect her donation to our armamentarium.

Study this new phase of homœopathy, gentlemen, remembering that "When one has to do with an art the aim of which is the saving of human life, any neglect to make oneself thoroughly master of it becomes a crime."

In a consideration of to-day's medicine we cannot neglect the subject of immunity. You all agree that the greatest advance of years in handling of disease is in prophylaxis. Everywhere typhoid, malaria, typhus,—what not!

Aside from the prophylaxis of sanitation, quarantine, etc., we must recognize the great protection of those exposed to disease in prophylactic vaccination.

This makes us glad of affiliation with our branch of medicine.

Who was the first immunizer? Jenner with his crude method that unless perfected must have gone to oblivion with its many dangers in its early use.

But fifteen years later Hahnemann taught immunity in cholera and told of cuprum and other drugs as efficient preventives, the selection to be governed by the nature of the epidemic. Cricca, of Smyrna, during an epidemic in 1865, so vaccinated, if you please, three thousand individuals, of whom no one was attacked by real cholera. Often you immunize to pneumonia some bryonia patient suffering with la grippe. Giving him bryonia in his below par susceptible condition, raises the power of his blood enough to fight off the pneumococcus just as efficiently as the typhoid bacterin in appropriate dose knocks a possible typhoid.

However, I don't care how you immunize or vaccinate your patients, whether naturally, synthetically, internally or externally. I feel that there is as much efficacy in proper internal

vaccination for small-pox as in the quite general use of tuberculin by mouth in dosage of one billionth of a milligram.

At the same time we must not deery hypodermic vaccination, nor even the surface vaccination against small-pox, its improved technique of to-day no longer holding forth the possibility of transmission of taints or specific infections.

Please look with favor on anything holding forth a promise of immunity for vital force, opsonic index, immunity and homœopathy are of one family.

My reference to the dose of tuberculin brings us to the problem of posology, the discussion of which has long been taboo in homœopathic circles, in the effort to preserve harmony among the Hahnemannians and the so-called progressives, but we must handle it in a talk on homœopathy of to-day.

All homœopaths have been wrong in this internal dissension; wrong in their interpretation of Hahnemann; and those who have argued upon the divisibility of matter and tried to prove such by the microscope have been equally as wrong as the high potentist who had no time for anything tangible. You must know that the "smallest dose necessary to cure" meant neither high potency nor low potency, but the dose necessary to produce a good effect without any observable ill effects.

Myer Solis-Cohen, in the *New York Medical Journal* of August 9th, 1913, gives reports of cases and refers to many authorities using one billionth of a milligram of tuberculin by mouth (between the eleventh and twelfth x dilution). Think of this from a Jefferson Medical College, dyed in the wool, old school prescriber! I quote from Cohen:

"All of the children (twenty cases) improved markedly. Their appetites became enormous. In some instances the effective dose of one hundred millionth of a milligram would maintain its action only for five days or a week, the temperature then rising again." He says: "I also remarked in some an intellectual stimulation, an improvement in mental activity. One child in particular, who for months had been morose and sullen, became talkative and smiled after being put on one hundred millionth of a milligram every five days." That, my confreres, almost convinces me that I should try the two hundredth of silica for a dose or two in a case which the twelfth has already helped markedly.

Huchard and von Behring saw the light of homœopathy and I know physicians in Portland who have practiced so-called reg-

ular medicine with its irregularities for twenty years; students, men who have been looking for a science of prescribing and are finding it to-day.

Gentlemen, the thinkers of all medicine recognize the homœopathicity of cure. Teach your people this homœopathicity and its origin. Many of the laity are now cognizant and of course want homœopathic treatment from homœopaths.

You can't make a good homœopath of to-day's graduate of Johns Hopkins. He's off on the wrong foot; so imbued with the material, with the laboratory, and has not the time to learn to select a synthetic simillimum for a case of eczema, for instance. Twenty years from now he may be ready to learn.

There, is the only reason for the separate school of homœopathy and how are we to preserve the art of picking drugs homœopathic to disease unless we send our students to our colleges?

To quote from Copeland: "Hahnemann knew nothing of the modern laboratory idea, yet his gigantic intellect was capable of formulating a science of therapeutics so accurate in its essential parts that the rest of the scientific world has adjusted and readjusted itself until now it fits perfectly. Study the modern ideas of disease as they are now understood, delve in physical chemistry as it is taught in every university of the world, listen to the forensic eloquence of the physicist, the chemist, the physiologist, and the pathologist; then take from its shelf the "Organon of the Art of Healing," written a hundred years since, and it will be found that the notes of all these latter day scientists are so attuned that when that voice of a century ago sings its lay to the modern music there is not a suspicion of discord, but in perfect sweetness the whole temple of science is resonant and reverberant in one symphony of perfect harmony."

I am asked, gentlemen, for the present-day status of homœopathy, and in reply tell you—that homœopathy is the present-day status of medicine.

SOME ABDOMINAL PAINS AND SOME ABDOMINAL ILLNESSES.

BY

CLARENCE BARTLETT, M.D., PHILADELPHIA.

(Read by invitation before the Blair County, Pa., Homœopathic Medical Society, March 30, 1915).

SOME years ago when in conversation with a prominent jurist, I took occasion to comment upon the opposite mental attitudes of physicians and lawyers in cases in which there were pronounced differences of opinion. Lawyers on the opposing sides of a controversy before the Court not uncommonly expressed their respective views most emphatically even to the extent of making uncomplimentary remarks concerning their opponents, at times descending to personalities; and yet upon adjournment of Court for the day, or after the jury had rendered a verdict, erstwhile enemies might lock arms, walk out of court the best of friends to hie themselves to club, golf course, or to engage as associate counsel in another case. The onlooker would find it difficult to believe the account of the happenings of the preceding few hours. With physicians it is different. Let two physicians have decided differences in opinion concerning a case, and let those differences be expressed however diplomatically to the parties most interested, and a professional coolness develops. My companion acknowledged the truth of my observation and remarked that such a state of affairs was to the credit of both professions. In law, it is universally recognized that one side of the controversy must be in error. The attorney defending that side did not therefore suffer any in professional prestige because his client lost. The public expected this. Even more, it might be that both lawyers were in the wrong either in part or in whole. Still the public forgave. Such conditions are incidental to legal practice. The worst that could be said was that the losing attorneys were unfortunate in having bad clients. In medicine there is a very different state of affairs. Doctors deal with health and life. There can be but one opinion concerning any case, namely the correct one, and yet mistakes,—mistakes indeed that can never be rectified,—must occur. Though admitting the fallibility of man, the public demands accuracy of

professional judgment in all cases. If the physician errs,—or even if there is breathed a suspicion that he may have erred,—he is too frequently condemned. It was therefore to the credit of physicians that they exhibited such undue sensitiveness as to professional honor and ability.

What has this prelude to do with the subject of abdominal affections and pains? Just this: It is probably in abdominal affections that differences of opinion are most frequently encountered and irretrievable mistakes made. Indeed they have been of such common occurrence that it has been but a few years past when the wise surgeon—the experienced surgeon,—very frequently refused to make a diagnosis prior to abdominal section, satisfying himself with recommending and even urging exploratory operations. The disposition to blame physician and surgeon alike for diagnostic errors is responsible for the extremists of this class. It has done even worse than this in that it has led the inexperienced to advocate surgery in cases to which surgery is not applicable.

Nevertheless, when it comes to the diagnostic principles which guide us in framing our opinions as applied to different pathological conditions, we are all in fairly close accord. We differ only in practical application because facts are not presented to us accurately or in their entirety and in proper perspective. Skill and system in examination technique enables us to bring out facts and place them in such array that the merest tyro can make the correct diagnosis. Still there must remain a large number of cases in which correct history is impossible either by latency of pathological process, lack of intelligence on the part of the patient or the absence of all history whatsoever owing to the sudden illness of the patient and his inability to speak for himself.

Facts obtained, they are naturally viewed first from the standpoint of general knowledge as formulated in the standard textbooks and journals of the period, and secondly from personal experience. I am not sure that most of us are inclined to give medical literature a lower respect than it deserves for do we not accept or ignore it according to that which we have ourselves observed, forgetting that while individual experience is invaluable,—indeed our best teacher, deductions gained therefrom must be subject to change as experience is

extended. Why not therefore use the experience of others as part of said extension!

An overwhelming majority of instances of abdominal illnesses observed by physicians in general are medical cases pure and simple. They include for the most part pains and vomiting of more or less acute onset dependent upon neglect of simple hygienic details with which all of us are fully acquainted. Very many of them are due to constipation. Usually their diagnosis is a simple matter. Nervousness on the part of a physician possessed of unusual solicitude for the welfare of his patient leads to a hysteric diagnosis of a surgical condition, especially of appendicitis, which mistake to the credit of the surgeon is generally rectified in time to save an unnecessary operation. Not so readily corrected are the mistakes of the medical man in certain fulminating and unusual cases of appendicitis, of which I have seen two examples both operated within 16 hours of onset. Their symptomatologies consisted of sudden onset, extreme local sensitiveness with paroxysmal pain, and marked muscular rigidity, but no disturbance in either pulse or temperature. In each case, peritonitis had started. It is hardly conceivable that such cases could have reached such an advanced stage without a period of pathological activity with clinical latency.

Appendicitis being unquestionably the most frequent cause of pain in the right iliac fossa has quite naturally attracted attention to the neglect of other conditions arising in this locality. For example, we may have such pain from distended or loaded cæcum.

Before dismissing this subject of appendicitis, it may not be amiss to refer to the generally admitted existence of appendicitis dyspepsias. Clinically, they present no definite characteristic syndrome, for it is within the range of possibility for them to present fairly close resemblances to any functional or organic gastric disturbance. Their recognition is based upon the association of dyspeptic symptoms with definite appendiceal tenderness associated with local rigidity. The latter symptoms often are not sufficiently obtrusive to demand attention aside from the gastric disturbance, and their existence may not be recognized until careful physical examination is made.

A personal experience with myself the clinical subject well illustrates how one can err as to the cause of pain in this lo-

cality. For a number of years, I was very much annoyed by dull pain in the right iliac fossa not associated with either tenderness or rigidity. It came and went; when present, it continued for a day or two, and then unaccountably disappeared. It was located somewhat below the McBurney point. Its long continuance gave me apprehensions of an appendectomy. Stating my fears to my colleague, Dr. W. B. Van Lennep, I was assured that notwithstanding the absence of tumor, the condition was probably one of weakness of the inguinal ring, and that sooner or later I would need a truss. The pain continued until about three years ago when a prominence appeared in the groin, after which a truss was fitted and the pain disappeared permanently.

A second experience is no less interesting than the above. An energetic woman aged 42 years who for years had accomplished an incredible amount of work suffered with right iliac pain without tenderness. This pain was not of itself sufficient to lead her to consult me. The real annoyance came from what she called indigestion, the sole manifestation of which was loud and persistent eructations of gas during meals, oftentimes forcing her to leave the table. Treatment never accomplished anything for her, because, as I firmly believed at that time, she never gave her nervous system any time to rest. Now for the sequel. About a year ago, she consulted me concerning a swelling in the groin, a hernia in fact, for which I referred her to Dr. J. Dean Elliott who prescribed a truss. The pain and tumor of course disappeared, but what is more interesting was the simultaneous departure of the so-called flatulent dyspepsia.

These experiences interested me greatly, and I searched literature for additional information, and found but little to enlighten me. Surgeons of my acquaintance had all had numerous cases of similiar character, but textbooks as a rule rested satisfied with merely recounting the physical signs of hernia and its operative and mechanical treatment. The most extended reference to the subjective symptoms of the sufferers was found in Johnson's *Surgical Diagnosis*, and even there was placed in a position lacking prominence and without reference in the index. Even, the reader is forced to infer the possibility of the subjective symptoms without local manifestations: "In most cases, however, certain symptoms are produced sooner or later, which call the attention of the patient to the

abnormal condition. In more than 90% of the cases there is pain. If the hernia has followed a sudden violent muscular strain, the patient may have had a sharp pain referred to the lower part of the abdomen or seat of the hernia, followed by a sense of weakness or of something having given away. An actual hernial protrusion, however, is usually not recognizable for some time, perhaps for weeks or months. The patient will suffer meanwhile from a sense of fulness or weakness at the seat of the hernia, accompanied by a dull dragging pain, increased by prolonged standing or straining, and caused to diminish or disappear when the patient lies down. In addition there may be intestinal disturbances, constipation, occasional nausea and vomiting. A good many of these patients soon discover that the pain and discomfort is diminished by pressing over the site of the hernia with the hand. If the hernia becomes of considerable size, and is not retained by a proper truss, the patients usually suffer from mechanical interference with the peristaltic action of the intestine, from constipation, sometimes from diarrhœa, colicky pain, flatulence, dyspepsia and other digestive disturbances." (Vol. II, p. 265.)

Within a few weeks there was admitted to the accident ward of Hahnemann Hospital by the City Patrol Service, a man aged about 40 years. While walking quietly along the street, he was seized suddenly with severe pain in the left groin, associated with vomiting and collapse. Examination disclosed no other symptom than most extreme sensitiveness over the inguinal ring. There was no physical sign of hernia. His bowels had moved regularly that morning as usual. His health to date had been robust. The surgical staff of the hospital would not hazard a diagnosis other than that "the patient needed watching and might demand operation." The leucocyte count at 1 o'clock was 12,000; at 2 o'clock, 17,000; by 3 o'clock, it had fallen considerably, the patient was comfortable, and at the end of a week, was discharged. There was what might be called reflex urinary retention; but the urine itself was free of abnormal chemical constituents and contained neither blood or pus.

The abdominal pains of pneumonia and pleurisy are always of more than passing interest. Uncommon though they are, any one of us may meet such cases at any time. All the textbooks refer to this subject and tell us that many have been the instances in which they have led to unnecessary abdominal

operations, especially for appendicitis. The importance of initial abdominal pains in pneumonic fever was first noted by Dr. J. Crozer Griffith, whose observations were directed largely to the clinical study of disease in childhood. Since the publication of his original paper, his conclusions have been pretty generally accepted, and their applicability to adult life admitted. My first experience in pneumonia with initial abdominal symptoms was about fifteen years ago. The illness began with what I regarded at the time as typical gall bladder pains, and framed my diagnosis accordingly; but the following day, the symptomatic picture had changed. Within a few weeks, an unusually interesting case was admitted to Hahne-mann Hospital, that of a colored woman aged 24 years. She gave a history of severe abdominal pains and obstinate constipation, active purgative medication having failed utterly to secure any action of the bowels whatever. When I saw her the first time, inspection of the abdomen showed a decided prominence over the right lower quadrant with rigidity; palpation gave rigidity on that side, *i. e.*, an apparent tumor. Although her respirations were rapid, an examination of the chest was neglected. Half an hour later, every abdominal symptom excepting the constipation had disappeared. The following morning they returned, and then an examination of the chest showed a pneumonia of the left upper lobe. The illness followed an uneventful course to complete recovery. So far as can be seen, the only safeguard against diagnostic errors in such cases is the rational practice of systematic examination of all patients instead of contentedly taking radical action upon the presence of one so-called signal group of symptoms. The presence of undue frequency of respiration should always awaken suspicion. Various explanations have been offered for the presence of abdominal pains in pneumonia, but not one of them has received the sanction of authority. The subject is an important one, for Chatard has observed abdominal pains 51 times in 658 cases of pneumonic fever.

Abdominal pains are also observed occasionally in pleurisy, especially in cases in which the diaphragmatic pleura is involved. Lord observed abdominal pain 8 times in 145 cases. The pain is usually in the upper abdominal region, and may be associated with rigidity and tenderness. A positive diagnosis can be made only when the physical signs of pleurisy

are evident. Unfortunately for accuracy's sake, the early friction murmur is not infrequently absent in the initial stage of diaphragmatic pleurisy, and a correct conclusion can be reached only by a study of the entire clinical picture with a historical survey of the illness to date.

I recall one case of diaphragmatic pleurisy associated with abdominal pain and hiccough in which the attending physician had made a diagnosis of uræmia based upon the urinary findings. While it is absolutely necessary to make careful urinary observations in every case of "acute abdomen" one should never unless the results are so positive as to be unmistakable, regard them as indicative of the condition of the kidneys. In the first place, we are all of us fully aware of the vagaries of chronic interstitial nephritis now running a latent course incapable of recognition until death is near, and again, presenting symptoms suggesting severe functional or even organic disturbance of other viscera than the kidneys. We are fully cognizant of its ability to produce hemorrhages, and yet too often forget that such hemorrhages may occur in the kidneys as well as in the brain. Now to the point. A man aged 63 years, the subject of high blood pressure, and known to have interstitial nephritis was taken with characteristic pains suggestive of left renal calculus. The urine contained a slight amount of albumin, a few red cells, and a few hyaline and granular casts. There was no local sensitiveness. He made a prompt recovery so far as the pain was concerned. He lived six years longer in good subjective health, but always had polyuria, slight trace of albumin, and a few tube casts, and blood pressure ranging around 170. Finally he was taken with cerebral hemorrhage from the effects of which he finally died. Interstitial nephritis far more frequently than is suspected may have its latent course interrupted by painful crises suggestive of stone.

On the other hand, severe abdominal pains from any cause, gastric, intestinal or hepatic, are capable of producing (?) albuminuria. Of this, we all have seen examples without number. Such cases need not lead to diagnostic error. The urine at the time does not show any casts other than the few hyaline observed in most instances of persons of middle life, and the albuminuria demonstrates its circulatory origin by disappearing promptly with the subsidence of the pain.

Typhoid fever is occasionally ushered in with abdominal

pain, and in consequence is mistaken for peritonitis. The error is quite natural, for the lesions of typhoid fever are situated in the last twelve inches of the ilium. Sometimes, however, the pain is in the upper abdomen, and is mistaken for cholecystitis. Fortunately we have a suggestion to guide us in differentiation in that the typhoidal pains are not apt to be associated with that symptomatic triad of appendicitis, tenderness, pain and muscular spasm. The Widal reaction is of no value for differential diagnosis, as it is often delayed until after the appearance of the enlarged spleen and the rose spots, which of themselves make the nature of the case conclusive. A leucocyte count is always a reliable differential sign, there usually being leucopenia early in typhoid, and always a leucocytosis in appendicitis.

The most inexcusable diagnosis as to abdominal disease is that of neuralgia related to one or another of the viscera. Personally, I have seen very many cases that had been so diagnosed, but not in one of them did subsequent events confirm the previously expressed opinion. Aside from the clinical fact thus emphasized, it is difficult to conceive of a true intra-abdominal neuralgic pain apart from the visceral crises of tabes, which are by no means uncommon. With the modern development of serial X-ray technique, the use of barium sulphate for gastro-enteric and argyrol solutions for ureterol-renal disease, errors in diagnosis should be greatly reduced in number. Not only that, a correct conception of the case may be obtained early, thus making it possible to institute proper methods for radical recovery.

Very many of these cases turn out to be cancerous. Physicians are loth to announce even a suspicion of such dire disease until assured of their accuracy, and as a result incline to some suggestion that gives hope and happiness to the patient for the time being. In the majority of cases of intra-abdominal carcinoma, the diagnosis is clear either by direct evidence or by exclusion from the beginning, but there are many others in which the most astute diagnosticians are puzzled even unto the termination of the illness in death. I think the following aphorism may be usefully applied to these doubtful cases. When an anomalous abdominal pain persists despite intelligent treatment and the associated symptoms and signs on the one hand give no adequate explanation of the case, and are not

inconsistent with malignancy on the other, a diagnosis of carcinoma is justified.

A very interesting illustration of the relationship between the gallbladder and glycosuria was admitted to Hahnemann Hospital during the present session. The patient was an Italian woman, aged 50 years. She had all the characteristic symptoms and signs of cholecystitis with distended gall-bladder. I was requested to see her because her urine contained five per cent. of sugar along with acetone and diacetic acid trusting that something might be suggested to prepare her to withstand the surgical operation which was so plainly indicated. Standard diabetic diet had been tried and failed to satisfy the indications. The oatmeal diet was no more satisfactory. As the patient was unquestionably losing ground, I advised immediate operation all precautions being taken to prevent acidosis. For two days she was given large doses of bicarbonate of soda. The operation was advised because death was certain without it, and might be averted if the cholecystitis was cured. Murphy in his Clinics a few years ago reported one case of glycosuria in which that condition disappeared permanently after drainage of the gall-bladder. Following the operation two per cent. bicarbonate of soda was dissolved in the hot saline solution of the Murphy drip. The operation was performed in Dr. Van Lennep's Clinic. Recovery was uneventful. Both sugar and diacetic acid disappeared from the urine, and the patient was discharged cured. This case suggests that all cases of diabetes should be examined clinically and by the X-ray as to the state of the gall-bladder.

Mistakes in abdominal disease are oftentimes made because we do not attach sufficient importance to our own personal observations which happen to be out of the ordinary. About 18 months ago, there was admitted to Hahnemann Hospital a man of about 55 years of age. I saw him the day after admission, at which time he gave the history of sudden pain to the right of the median line, but above the level of the umbilicus. Inspection showed a prominence over the seat of pain and palpation disclosed a hard mass with smooth surface not movable. My diagnosis was carcinoma of the stomach. I did not see the patient again for three days at the end of which time, the mass occupied the whole of the upper abdomen, and apparently originated from beneath the left costal arch,

and extended far below the umbilical line on the left side. Extension to the right had not taken place. The patient was markedly anæmic, the blood showing the changes incidental to ordinary secondary anæmia. Several of us thought we could feel a notch, which though not by any means characteristic we took to be that of the spleen. A possibility of splenic anæmia or Banti's disease was suggested, and surgical intervention suggested. The surgeons unanimously decided that the patient's condition and the probable nature of his illness were such that he would not leave the operating table alive. After lingering a month, the tumor apparently not growing any larger, he died and autopsy showed that the immense mass was an organized blood clot originating in a duodenal ulcer which had perforated, the opening being small and the associated hemorrhage slow. Looking over the history of this case after completion is hardly self-satisfying. The patient it is true was below average intelligence, and gave no history of ill health prior to the onset of the sudden pain, certainly no signs or symptoms suggestive of a previous duodenal ulcer. The discovery of a tumor at the first examination did not negative cancer, for we know that that disease may run a latent course for a time, and then present phenomena of rapid onset. Duodenal ulcer may also be latent, and perforation always gives sudden pain. As a matter of fact the sudden onset of pain with a rapidly growing mass proceeding from right to left should have led to a correct diagnosis. My mistake originated in the assumption that my first observation was not correct. For the time, I forgot what I have always taught, the great value of serial physical findings, which we should regard as of great value in abdominal work as in diseases of the chest.

Single positive symptoms should outweigh in value all evidence however valuable when it is of negative character. There was admitted to Hahnemann Hospital a patient presenting every sign and symptom of cirrhosis of the liver excepting one. He had the alcoholic history, the pre-ascitic gastric disturbance, the characteristic facies, ascites, and enlarged abdominal veins. But his liver was enormously enlarged and nodular, extending to the crest of the ilium. Such a liver could under ordinary clinical conditions mean carcinoma only, and yet the other symptoms spoke so strongly of cirrhosis, that there was a disposition to hold the diagnosis in reserve. The autopsy demonstrated a large hepatic carcinoma.

A private patient coming under care in October 1913, gave a history of recurrent vomiting for 3 years past. Otherwise the illness was symptomless. The Professor of Medicine in a Western University had, after a painstaking examination diagnosed cirrhosis of the liver despite the absence of an alcoholic history. Under treatment, the essential element of which was rest, the vomiting ceased, and the patient was about ready to resume his work, when a relapse came on in January, due probably to increased business activities. Lavage and generous tubal feeding soon brought about recovery. In the latter part of February, he underwent considerable physical exertion over a period of four days, when he again relapsed. It was then noted for the first time, that his vomiting always took place in the latter part of the day, and aggregated in quantity the amount of nourishment taken since the last emptying of the stomach. In other words pyloric obstruction was suggested strongly. Repeated gastric analyses had given normal acidity and HCl, with absence of lactic acid and occult blood. In the latter part of April, occult blood was discovered. The case might have been either ulcer or cancer. There was a suspicion of a possible tumor in the region of the pylorus, at one examination only. The age of the patient (45 years) and a family history of cancer, spoke for cancer. The long duration of the illness, the well marked HCl reaction, and the long continued absence of occult blood favored ulcer. The tumor might have been cancerous, or a cicatricial thickening of the pylorus. Later, Dr. H. L. Northrop examined the case, and was certain of the pyloric mass, and inclined to a diagnosis of ulcer, operation confirmed this diagnosis, but the nature of the mass was not positively determined until after a microscopic examination. While the case stands as an example of the difficulties in diagnosis even after repeated examinations, it should be noted that the elements of doubt persisted until after the operation and the excised pylorus had been subjected to rigid microscopic examination. It might well have been that we were dealing with an old ulcer which had become cancerous, so that the long continued illness could not exclude malignancy.

This case teaches that we are not always justified in assuming that pyloric obstruction with gastric dilatation in patients after forty is malignant. Several years, there was a case of this kind in Hahnemann Hospital, which Dr. Goodno and I diagnosed as probably malignant. We decided against opera-

tion. Autopsy showed non-malignant obstruction. The dilatation was known to be extreme. How far the great dilatation should have influenced us against our conclusion is hard to say. Physicians will support us or oppose us according to experience. Osler declares that the majority of cases of pyloric obstruction with marked dilatation after the age of forty are cancerous. Lockwood and others say differently. The latter would seem to hold the best theoretic position. Carcinoma seldom survives more than 12 months during which time the obstruction has scarcely the opportunity for producing the extreme degree possible from benign stenosis. Extreme dilatation then on theoretic grounds should suggest benign disease. So far as I know Osler is the only authority presenting statistics covering this point.

A recent case shows the necessity for the physicians in charge having full knowledge of the progress of the illness. A woman aged 32 years suffered from paroxysms of abdominal pain with jaundice, fever and leucocytosis. The main tenderness was over the gall bladder; but there also existed at times pain and sensitiveness just below the margin of the ribs and well to the left of the median line. General medical treatment with strict rest gave ten days freedom from symptoms, when there was a recurrence. In the meantime the patient had been X-rayed by Dr. J. W. Frank who diagnosed extensive adhesions about the gall bladder and remarked incidentally that the stomach emptied itself in 4 hours. Drainage of the gall bladder was performed by Dr. Van Lennep. The operation was beset with difficulties owing to the extent and density of the adhesions prophesied. The patient made a good recovery and remained free from pain so long as the opening in the gall bladder remained. When the pains returned, the vomited matters consisted of food eaten the day before, showing conclusively that there was gastric retention. Reopening of the gall bladder again brought relief. The intention now is to keep up drainage for an indefinite period. This case also teaches the lesson that valuable though the serial X-ray examination may be, it fails in its inability to give the state of affairs at the time of the paroxysms. If with the onset of the pain, the patient is given the X-ray meal, we are obliged to wait over a period of several hours, certainly not less than 6 in order that the series can be concluded. In this case, of course, the clinical observation "vomiting of food eaten the

day before" is conclusive, still one would feel better satisfied if such symptom could find some confirmation by observations during the attacks,—obviously an impossible, perhaps an unreasonable wish.

In another case X-rayed for me by Dr. W. C. Barker, the only lesion shown was a kink in the ascending colon at the hepatic flexure, together with moderate dilatation of the cæcum. I have had the opportunity of observing the patient through one paroxysm, which had as its central symptom marked sensitiveness on a level with and to the right of the umbilicus and on a line with the anterior superior process of the ilium. This corresponds pretty closely with the X-ray observation.

In closing, I wish to refer to the so-called abdominal neuroses. Increasing experience is teaching me that such a diagnosis is justifiable in about ten per cent. of the cases in which it is made. Barriers to progress in this direction have been the one idea of progressivists so absurd in their nature as to antagonize all rules of reason. Thus to say "that ulcer is the sole cause of chronic dyspepsia," or all "dyspepsias are due to under-feeding" does harm by the sweeping nature of the statements. As a matter of fact, the majority of the neuroses include starvation dyspepsias, the effects of ulcer of duodenum and stomach but especially the former, splanchnoptosis, mesenteric arterio-sclerosis, latent appendicitis, and gall bladder disease. Perhaps I may be too sweeping in my statement when I express as my belief from years of experience that the majority of so-called nervous dyspepsias in stout women past middle age are of gall bladder origin. Really, this subject of abdominal illnesses might be extended indefinitely. In a large hospital one sees such varieties of cases and patients as to teach him that in each one there is something new not observable in those that have preceded.

EDITORIAL

SUGGESTIONS TO CANDIDATES FOR MEDICAL LICENSURE.

FROM an observation of the applicants and from an analysis of the answers given to the questions submitted by the Bureau of Medical Education and Licensure of this State, certain deductions can be made that might be profitable to consider.

Many candidates are far too anxious to commence immediately upon the written answer to the question, without giving due care and study as to the precise character of information a correct answer of the question would require.

This lack of a careful study of the question will often result in the applicant writing many pages upon subject matter that the question does not call for.

Applicants should realize that the questions have been carefully considered with reference to the amplitude and completeness of details expected in the answer.

The preface to a question of such terms as: "describe," "describe in detail," "enumerate," "state," "outline," "name," "compare," "contrast," and "give" have all been selected with discrimination.

A candidate should recognize that he does not gain additional credits or a higher grade by writing upon matters that the question he is answering does not require an answer upon.

A practical illustration of this: a question was given in the Session devoted to examination in Diagnosis and Symptomatology, as follows: "Enumerate the early symptoms and physical signs in an early stage of acute peritonitis."

Now the correct answer to this question merely required an enumeration of the physical signs and symptoms of the early stage of peritonitis. It did not require any detailed description of the entire process. It did not require any description or reference to the terminal stages of peritonitis. It did not require any information as to its surgical treatment or etiology. It did not require any information in pathology or bacteriology except such as might relate to diagnosis. Yet many applicants spent more time in writing upon the subjects not requiring an answer, than they did in answering the direct question.

Some candidates do not seem to have clearly in mind the fact that the "combined" type of questions, as used in this State, usually require information upon more than a single branch of medicine.

A single question may require information upon all the subjects that are indicated in the headings of the Session of the examination in which that question is asked. For instance, an applicant may consider only the pathological element in a question which is supposed to elicit information upon bacteriology and physiology: he may consider only the surgical proposition in a question that is supposed to reveal equally his knowledge of anatomy, and so on through the entire series.

If a question is asked in reference to any condition, about which the applicant may have some doubt as to the precise condition upon which information is required; say for instance, a pneumonia or a nephritis, the applicant should preface his answer by the special type of the condition he is describing.

If there is any element of uncertainty in the mind of the applicant as to the character of the information that any question was supposed to elicit, he might with profit preface his answer by his own construction of the problem he proposed to answer.

The following practical statements to applicants are suggested for their careful study.

1st. This Bureau has not, nor will not ask questions, that graduates of the medical colleges of this State, or colleges of equal grade, should not readily and accurately answer.

2d. Do not feel that the Bureau is trying to "throw" you. The Bureau is not trying to "throw" any well prepared man. We feel that your own alma mater would not have passed you if they had not considered you well prepared.

3d. In the examination, when you receive your questions, look over first the subjects of that session of the examination. Keep in mind that it is only information upon the subjects of that session that will affect your grade.

4th. Next look over carefully the questions to be answered. Do not attempt to write your answers until you have formulated in your own mind the character of the information required. Think more before writing than after you have written.

D. P. MADDUX, M.D.

THE FUTURE OF "SIMILIA SIMILIBUS CURENTUR."

SAMUEL HAHNEMANN was a man of great intelligence, a graduate of a German University which represented the highest standards of culture and intellectual training available at that time. After painstaking and long study he demonstrated the "Law of Similars" and endeavored to give to his colleagues and to the medical world at large, the results of his work. He did not attempt to establish a new school of medicine: he intended only to publish for the good of the profession, the results of his clinical research work upon drug action. That a "New School of Medicine" came into existence was due to the persecution to which he was subjected by druggists and by his medical colleagues, who then as now, were condemning without investigating. As a result of this persecution and indeed prosecution, he was forced, in order to demonstrate what he knew to be so, to establish a separate School.

If one will study the early days of Homœopathy and the men who took up its study in those early days and spread its principles, one is impressed with the intelligence, the courage and the sincere convictions of these men. We can indeed with pride revel over the "blue blood" of our medical ancestors.

In our country the history of this "New School" is one which can well be read with pride. In the "Allentown Academy," the first institution in which Homœopathy was taught in America, the standards for entrance and the subjects required as essential for a medical training, were higher than is at present required of the graduates of Pennsylvania institutions. The professors were graduates of German Universities and examinations were conducted upon the same rigid basis as they were in Germany. No other school of medicine has sprung from such medical scholars as has our own school.

In all the history of medicine since the inception of the Homœopathic School, there has never been a conflict between the Dominant School and our own, as to the standards of educational and scientific training deemed essential for an adequate medical education. We have always stood in the forefront of progress along these lines and still continue so.

Study the history of Homœopathy as you will: the deeper

you go into it, the more thoroughly convinced you will become that it is a history to be proud of.

Upon the work of Hahnemann and an earnest study and practice of the principles of Homœopathy, our staunch, intelligent medical forefathers built up a strong school of medicine. The results of the work of these men, if carefully and fairly studied, cannot be thrown aside without argument. These men tested thoroughly the principles of Homœopathy, they demonstrated the value of "*Similia Similibus curentur*" they believed in it, practiced it and created a wide-spread demand for it.

If we will be fair we must judge the scientific statements of Hahnemann in the light of eighteenth century knowledge. If we will do this we will see how far he anticipated some of the advanced knowledge of the twentieth century. Some of the most recent therapeutic methods of the "Old School" are confirmative of Hahnemann's basic philosophy. Some very typical instances of this were cited in the Presidential address at the last Homœopathic State Society Meeting.

If there is today a falling off in the demand for homœopathic treatment, is it due to changed conditions which have rendered the law of similars unworkable? Is it not perhaps due to the fact that the sons have not taken care of their inheritance: have not honestly and earnestly studied its principles and so, with meager understanding have turned out poor goods and thus caused a falling off in demand?

"*Similia similibus curentur.*" as a working law, is the same today as it was in the day of Hahnemann. If it is to live as a valuable guide in the treatment of the sick, then we must see to it that the colleges in which it is taught are kept in existence and that the organizations of our School be constantly alive to the best interests of our Institutions.

The future of *Similia similibus curentur* depends upon us.

G. J. PALEN

GLEANINGS

ARE WE EXAGGERATING THE DANGERS OF HIGH PRESSURE?—Tom A. Williams, M. B., Washington, D. C., *Critic and Guide*, November, 1914. High arterial tension is not itself a great danger, but the agent which produces it is. The author attributes it to hyperproteosis. And the cause of this is the failure of the organism to deal with an excess of protein. Cases are reported showing the efficacy of treatment which limits the proteins and increases metabolism by proper dietary means. Not all the cases show arterio-sclerosis, or high blood pressure. Vertigo, paresthesia, lumbago, recurrent headache or a thick, dull feeling with incapacity to concentrate, or wakefulness and irritability, or melancholy may be the chief signs. Alcohol is of little importance in the etiology, except in cases where it produces hepatic or renal insufficiency. Any pressure above 120 is abnormal, even though usual in older people. Anxiety and strain are merely subsidiary factors.

DIETETIC DISORDERS IN INFANTS.—Pritchard, in *The London Lancet*, discusses some of the common errors in diagnosis and treatment of these conditions, laying particular stress on the importance of considering disturbances of the motor functions of the alimentary canal. Many cases of so-called indigestion are intractable to treatment because they are not recognized as being due to a perverted or inco-ordinated action of the motor functions, a result dependent more on habit than on the particular qualities of the food which, for the time being, the infant may be consuming. Errors in the diet of the earliest days of life may lead to symptoms which are called indigestion, but these symptoms may be perpetuated as bad habits long after the cause of them has been removed. The conditions which Pritchard describes, he believes, though originally produced by faulty methods of feeding, were wrongly ascribed to defects in the food and were wrongly treated by changes and alteration in the diet. There is only one cure for faulty habits of this kind, and that is re-education. Among conditions discussed are: Cardiospasm, with and without esophageal dilatations and diverticula; "rumination"; pyloric spasm; and spasm of various portions of the intestine. Diarrhea may often be due to an abnormal hypersensitiveness of the neuromuscular mechanism of the intestine. In cases in which diarrheal movements contain undigested curds, it can often be demonstrated that these curds are merely balls of mucus, and when the treatment is based on the idea that these are undigested milk, it is usually fruitless. Reflexes arising from violent sucking at a dry breast or on a nipple with too small an aperture may also lead to diarrhea. Constipation may be the result of a dulling of the rectal reflex through over-

stimulation by cathartics, from excess of fat or from underfeeding. Colicky pains are usually due to spasm of the intestinal muscles or of some sphincter. The use of the X-ray and bismuth meal is the most valuable means of diagnosing these motor disturbances, but a carefully taken history will usually give a clue to the primary cause which led up to the formation of a bad habit of action of the neuromuscular mechanism.—*Charlotte Medical Journal*.

A BACTERIOLOGICAL STUDY OF TUBERCULOSIS OF THE LYMPH GLANDS IN CHILDREN. (*Edinburgh Medical Journal*, September, 1914, p. 209.)—Mitchell has investigated, at the Royal Hospital for Sick Children, Edinburgh, the relative frequency of the bovine and human types of tubercle bacilli in tuberculosis of lymph glands in children. In a series of 29 autopsies in children under twelve years of age, dying from all causes, cultures were isolated in 12 of the 29 cases. Eight cases yielded cultures of human tubercle bacilli, and 4 of the bovine type. Of the 4 bovine cases, 3 died from tuberculosis, the immediate cause of death being tuberculous meningitis. The other child died from intraperitoneal hemorrhage, the tuberculous lesions being found at autopsy. In all 4 cases bovine tubercle bacilli were isolated from the mesenteric glands, from cervical glands in 1, the bronchial glands in 1, and the meninges in 1. In the cases in which human tubercle bacilli were found, in all but one the bronchial glands were the primary seat of the disease. Human tubercle bacilli were isolated from the tonsils, cervical, axillary, bronchial and mesenteric glands.

A study of cervical glands removed at operation showed in 80 consecutive cases 71 instances (88 per cent.) of infection by the bovine bacillus, and 9 instances (12 per cent.) of infection by the human tubercle bacillus. The cases were those of children twelve years of age and under. The maximum incidence occurred during the second year. Of children two years and under, 84 per cent. had been fed with unsterilized cow's milk. Out of 8 cases of abdominal tuberculosis, 7 proved to be of bovine origin and 1 of human origin. All the children were under twelve years of age and had been fed on raw milk. In the human infection the father had chronic pulmonary tuberculosis.

ADRENALIN IN ASTHMA.—HERTZ (*British Medical Journal*) recalls the fact that the effects of subcutaneous injections of adrenalin have recently been discussed in a number of papers. From a considerable personal experience Hertz has come to the conclusion that the dose generally used for asthmatic attacks is much greater than is necessary. The first dose he ever gave himself, about two years ago, was 3 minims of 1-in-1000 solution of adrenalin chloride. The relief of the asthma was almost instantaneous, but he felt extremely ill for some minutes, his hands shook so much that he could hardly put the syringe away, and his pulse became very rapid. Since that date he has given himself a large number of injections, but never more than 2 minims, and rarely more than one: for slight attacks half a minim has been sufficient. With these small doses the only effect he ever experienced is relief of the asthma, and this is invariable. No attack has kept him awake for longer than five minutes, except on one occasion when he broke the syringe, and was consequently

awake all night. His pulse is hardly accelerated; and he does not feel the slightest discomfort. The relief is so rapid that he falls asleep within a minute or two of putting the syringe back into its case. Small doses of this kind have the further advantage that they are unlikely to have any permanent ill effect, such as the production of atheroma. Even if three or four doses are required in twenty-four hours, which is most unusual, the total amount injected is less than is commonly recommended for a single injection.

OPPORTUNITY FOR DEMONSTRATION.—The present world war affords an unparalleled opportunity for the many irregulars, fakirs, faddists, shysters, ignoramuses and other camp-followers of medicine to prove their claims.

The osteopaths may replace the dislocated rib which causes cholera.

The mechanico-therapeutists may adjust the slipped vertebra and thus lessen the death roll of pneumonia.

The chiropractics may join in the work of their co-laborers the naprapaths in adjusting the circulatory mechanism of the rheumatic sufferers in the wet trenches.

And the Christian Scientists and others of similar ilk may do a noble work in convincing the wounded that their bullet perforations are only errors of mortal mind.

Isn't it queer that none of the contending forces have called for the aid of these classes of healers?

Has any body heard of any Christian Science volunteers anxious to go to the front?

When humanity goes up against the real thing in disease and injury, it doesn't want any damphoolishness; it calls for the good old-fashioned doctor and nurse!—*Denver Medical Times*.

DANGER FROM DRUGS SUPPOSEDLY HARMLESS.—Calling attention to the well known increase in deaths from degenerative diseases in the United States during the past three decades, M. I. Wilbert, of the Public Health Service, in an article on Drug Intoxication (Reprint No. 227 of the *Reports*), attributes the phenomenon to the remarkable increase in the manufacture and inferentially in the consumption of materials used in medicines. While the increase in population from 1880 to 1910 was approximately 83.3 per cent., the increase in the value of patent medicines and related products was 740.5 per cent.! The population has not doubled, but the medicines have increased ninefold. The people of the United States expend annually five hundred million dollars in medicines, most of which are consumed haphazardly and not under professional supervision.

What is particularly striking in Wilbert's report is that reference is not made especially to narcotic drugs, but to agents not habit-producing and generally presumed to be innocuous, e. g., the soluble salts of mercury, lead, uranium, and related metals, which affect the kidneys, the coaltar analgesics and hypnotics, which may disorganize the blood, even quinine, large doses of which cause cinchonism, manifesting itself in gastritis, chronic gastric catarrh, deafness, and even blindness. The salicylates, too frequently used for headache and neuralgia, interfere with digestion and produce symptoms analogous to cinchonism. The hebetic mental con-

dition brought about by the long continued use of sulphonal is well known.

In connection with some drugs, the use of which is long continued, the body may acquire a tolerance or diminished sensitiveness to their action. This appears to be particularly true of narcotics and of many of the cathartic drugs. These lead to the habitual consumption of drugs, and their use once begun is fraught with difficulties. The use of the so-called laxative drugs, says Wilbert significantly, is not an entirely negligible factor.

The amount of money expended annually for drugs and medicines in this country is out of all proportion to the real need or requirements of the people, and to this extent at least the unnecessary use of medicines may be considered an economic waste. The rapid increase in mortality from degenerative diseases and the fact that this increase is greatest in persons who should be in the prime of life, warrant making a careful study of the problems involved in order to direct attention to the causative factors of the degenerative processes.

LEAD POISONING FROM INDUSTRIAL AND MEDICAL POINTS OF VIEW.—Oliver (*Clinical Journal* of London) says that the treatment of industrial lead poisoning is both preventive and curative. The abolition of female labor in white-lead works, is now admitted to have been one of the best things for employers, as well as for employed. One of the main things in connection with lead works is not to give employment to any person who is believed to be susceptible to the poison. It is not always easy to differentiate in this respect between persons who are susceptible and those who are not, but it is a wise precaution that no man should be given work at a factory without previously having undergone a medical examination. At one of the lead factories in Newcastle-on-Tyne Irvine examines all fresh applicants for work, as well as men who had given up the work and are applying for re-employment. The previous occupation is inquired into, the teeth and gums are examined, the urine is tested, and the blood-pressure is taken. A blood-pressure above 140 mm. of mercury is a disqualification for work; so, too, albuminuria, anemia, and alcoholism. Repeated medical inspection of the work-people at short intervals, with power to suspend in case of necessity, attention to details of personal hygiene on the part of the workers, also the introduction by the employers of hoods and exhausts to remove dust at the places where dust is created, have done much to reduce the number of industrial lead poisoning. The last regulations for lead works were issued in 1908. On Tyneside, during the few years previous to 1908, there were on an average fifty-five cases of lead poisoning notified to the Home Office every year, but since then the average is six. A few years ago risks in lead works had become so great that insurance companies would not accept offers; now the various companies compete with each other to secure their patronage. The writer does not deal with the medicinal treatment of lead poisoning, for he wishes to draw attention to a line of treatment which is both preventive and curative.

Some time ago one of the writer's laboratory animals, having become paralyzed in its forefeet through having taken lead, it seemed to the writer that if he could remove the lead from its body he should get the animal well again. Electricity suggested itself, and as Clague, of Messrs. Mawson & Proctor, chemists, Newcastle-on-Tyne, had had some successful experi-

ments of the introduction of medicines into the system by electrical methods, or what is known as ionic medication, the writer asked him to devise a means whereby lead might be removed from the body. He suggested a double electrical bath. This was tried, with the result that the paralysis disappeared, and the animal recovered. Lead was found in the bath water and on the negative pole. Other experiments were repeated, with the same result, leaving no doubt as to the removal of lead from the living body.

The theory of the treatment is simple enough. Metallic compounds are readily split up into their components by means of electricity, and in this disruption the metal or ion goes to one pole, viz., the negative, while the acid radicle goes to the positive. When, therefore, a workman has his feet immersed in a bath in which the positive electrode has been placed and his hands and forearms are immersed in another bath in which the negative electrode has been placed, and a current of 15 volts and 30-40 milliamperes is allowed to pass for half an hour, lead in minute quantity may be found on the negative electrode and in the arm-bath water. If one takes a U-shaped glass tube and, after having filled it with water containing a small quantity of common salt, places a piece of skin tightly over each mouth of the tube and then inverts it, placing one limb in a dish containing water with lead dissolved in it and the other limb in a dish containing only water, and allows the tube to stand thus for hours, no change occurs. The water remains in each bath practically as it was before the experiment. If, however, the positive pole of an electrical battery is immersed in the dish of water containing lead and the negative pole is placed in the dish of water containing water only, the passage of an electrical current is followed by the lead being actually transferred from the bath which contains it through the U-tube into the water previously free from lead.

THE CHRONIC ABDOMEN.—Under this title Connell (*Surgery, Gynecology and Obstetrics*, December, 1914) contributes in a brief but highly important article the results of his clinical work upon a class of cases for which medicine has done little and possibly surgery less. He applies the term "chronic abdomen" to cases which could not be attributed to ovarian trouble, to displacements, to appendicitis, to duodenal or gastric ulcer, to pylorospasm, enteroptosis or gastric crises, and notes that treatment directed toward the cure of these conditions has many times failed to give permanent relief to patients having more or less of the symptoms included under the caption chronic abdomen.

Chronic abdomen may be characterized by abdominal pain, usually in the right side, localized or general, constant or periodic, often associated with hyperesthesia or paresthesia, without increase in temperature and rarely of such severity as to require morphine. It is often, but not always, relieved by recumbency. Constipation is usual, but may vary from the most obstinate form of diarrhea with colitis. Nausea and distress after eating are common, vomiting rare. The symptoms described by Lane as autointoxication are present in a more or less marked degree. The most strikingly constant and permanent symptoms are those which are called nervous. Physical signs are few. There is pain and tenderness in the right side of the abdomen, often in the right iliac fossa. Hyperesthesia is many times characteristic. At times a dilated cecum may be palpated; there may be

gurgling on palpation of this region. The X-ray may corroborate the very apparent clinical fact of delay in the intestinal contents. The most recent explanation as to the cause of this is intra-abdominal adventitious bands or membranes. Such adventitious bands may be found at various points within the abdomen, such as the terminal ileum, the ascending colon, hepatic flexure, duodenum and gall-bladder, splenic flexure, and the sigmoid. These abnormal (or abnormal development of normal) bands or membranes may cause various manifestations of obstruction, from complete and acute, through chronic ileus, to an entire absence of symptoms, despite their marked development and demonstrable presence. The fact that such structures do exist without causing symptoms has given rise to great confusion as to their clinical significance.

In order to arrive at some definite understanding as to the etiological relationship between these bands or membranes and the symptoms complained of, it would seem advisable to review, as to the remote result, a series of cases in which the operative procedure was confined entirely to these structures. Connell presents an analysis of 19 cases in which appendectomy had been previously performed without permanent improvement, and in which at secondary operation these membranes and bands were found and an attempt made at their correction. Twelve of the primary operations were internal ones for appendicitis. The time between operations was from one to ten years; in the majority less than four years. Between operations the history showed acute colic demanding morphine in six; hyperesthesia in nine; ten were neurotic; constipation was marked in all but two. There was a palpable mass in the right iliac fossa in seven. At the second operation cecum mobile was found in eleven of the cases. Division of the periodic membrane and plastic repair was performed in thirteen; division of the ileal band with plastic repair in seven. While considering the question of treatment in this class of cases Connell mentions the fact that two were treated by non-operative measures, both making prompt recoveries.

As to results it is noted that one case is too recent to be considered; seven cases have been markedly and satisfactorily relieved from the symptoms; eleven show no improvement. The primary result in all cases was dramatically favorable, but the symptoms began to return after a variable time, from a month to a year. Connell observes that the very common condition of overexcitability in these cases seems to call for a serious study of the visceral nervous system and neurological consultation before instituting operative procedure.

This paper accentuates first the need of prolonged observation before deciding as to the value of a given operative procedure, and second, the circumstance that we are not yet in position to offer a satisfactory explanation and, consequently, an adequate cure for that condition which he aptly terms the chronic abdomen.

To the profession at large this contribution comes with special value as having been given in the spirit of truth and a desire for knowledge.

EARLY PULMONARY TUBERCULOSIS IN CHILDHOOD.—Fraser's communication is based on an analysis of the results of an investigation, clinical and otherwise, into certain important points in connection with 296 cases of

pulmonary tuberculosis (mostly incipient) among school children attending elementary schools. Fraser found that the commencement of school life has a prejudicial effect on children predisposed to pulmonary tuberculosis. Inadequate increase of weight is very suspicious, and that weight and nutrition should not be considered independently. Defective nutrition is probably the earliest indication of a tuberculous infection, before any recognizable physical signs are present. Night sweating is only significant when the sweats are heavy and characteristic. It was present in 55.8 per cent. of the cases, being heavy in 10.2 per cent. A persistent hard, dry cough is the most suspicious type of cough. It was present in 134, or 45.3 per cent., of the cases. In nearly every case one or other apex is affected, and the right apex is most often the first clinically recognizable focus. In only one case (0.3 per cent.) was neither apex involved; the apices of both lungs were affected (with or without some other part or one or other lung) in 221 cases (76.8 per cent.).

Dullness is almost invariably present over the affected lung (95.3 per cent.). Inequality of the breath sounds is a very early indication of trouble; the duration of this is short, and it is usually succeeded by bronchial breathing, which is nearly always present and which remains indefinitely. Friction and fine crepitations are the most significant accompaniments; and all accompaniments when persistent and especially if localized, are suspicious. Spontaneous improvement is more common in girls than in boys; from the sixth year the tendency to spontaneous improvement increases year by year; and children in rural areas show a very much greater tendency to spontaneous improvement than children in urban areas.—*Journal of A. M. A.*, Feb. 13, 1915.

INTRAMUSCULAR INJECTIONS OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.—J. D. Rolleston and C. Macleod (*Brit. Jour. Child. Dis.*, 1914, xi, 289) say that, judging from the literature, the practice of intramuscular injections of diphtheria antitoxin has been confined to German-speaking countries. Their paper is based on six months' experience with this method at the Grove Hospital. In all 412 injections were given to 399 patients. Subtracting from these 33 still under treatment and 45 found not to have diphtheria, 261 cases of diphtheria received 324 injections. Fifteen died, a mortality of 5.7 per cent., which would be reduced to 4.6 per cent. by excluding 3 cases which died within 24 hours after admission. The severe faucial cases received from 16,000 to 20,000 units on admission, usually the same, but sometimes a smaller dose, being repeated if necessary on one or two of the following days. The moderate faucial cases received from 8,000 to 12,000 units on admission, the same dose being occasionally repeated on the following day. The mild faucial cases received from 4,000 to 8,000 units, and it was rarely found necessary to repeat the dose. The cases of nasal, laryngeal, conjunctival or aural diphtheria in whom there was no faucial involvement, and consequently little, if any, toxemia, received from 4,000 to 12,000 units, the total amount of antitoxin given in each case. Intramuscular injection, preferably in the vastus externus, deserves to supersede all other methods of administration of antitoxin in the treatment of diphtheria for the following reasons: It is quite as simple as the subcutaneous method, ensures much more rapid absorption, is less

painful, and less liable to give rise to abscesses at the injection site. It is superior to the intravenous method, not only in the greater simplicity of its technique, but also in the less rapid excretion of antitoxin after injection. The more rapid absorption of antitoxin by the intramuscular route is shown, not by the effect on the faucial or laryngeal process, but by the lesser incidence of paralysis, especially of a severe kind.

ADRENALIN IN THE TREATMENT OF CHOLERA.—In the *Berliner Klinische Wochenschrift* of October 26, 1914, Lichtwitz of Gottingen, after pointing out that Asiatic cholera is comparatively unknown amongst German physicians, goes on to consider its therapy, making special mention of the value of adrenalin. He points out that when cases of cholera reach the algid stage the mortality usually amounts to 80 per cent. and that it is exceedingly important to maintain not only the warmth of the body and urinary secretion, but also to combat circulatory feebleness. He believes that the remedy which does this most quickly and surely is an intravenous injection of one cubic centimeter of the 1-1000 solution of adrenalin, and in from 500 to 1,000 cubic centimeters of normal salt solution. This injection may be repeated to the extent of one half a liter every three or four hours.—*Therapeutic Gazette*, January 15, 1915.

THE USE OF ANTITOXIN IN DIPHTHERIA.—Woody, in the *Journal of the American Medical Association* of September 3, 1914, after treating thousands of cases, says that the following indicates just what the writer means by large doses, and the doses he is accustomed to give:

No case of diphtheria, however mild, should receive less than 10,000 units.

Both tonsils well covered with exudate, of one or two days' duration, from 30,000 to 60,000 units.

Both tonsils well covered with exudate, with palate, uvula and nose involved, of three days' duration or thereafter, from 150,000 to 300,000 units.

Nasal cases, simple, 20,000 units.

Nasal cases with marked symptoms of toxemia, from 50,000 to 150,000 units.

Laryngeal cases, from 30,000 to 45,000 units.

Laryngeal, in combination with other varieties, should mean a corresponding increase in dosage.

The theoretical advantages of large doses have been stated. One practical advantage also is the avoidance of the pain and discomfort of frequently repeated doses. What are the objections which might be urged against the use of large doses?

1. Such an amount of antitoxin might prove harmful to the patient. This is disproved by actual experience. Untoward results from the use of diphtheria antitoxin have followed the use of moderate or even small doses just as often as after the use of large ones. Indeed, it has been shown that such a result is not due to the antitoxic bodies themselves, but to the serum alone. There is then a great possibility that such after-effects might be avoided entirely, certainly minimized, by the higher concentration of the antitoxin.

2. The possibility of anaphylactic shock. In the writer's experience

this is extremely rare. Its occurrence is of such great rarity that it cannot be allowed to influence us in the least. Too many lives are lost by too little antitoxin being given to allow a theoretical possibility to keep us from making a cure.

Local sloughing from the bulk of the serum is very rare and will be avoided entirely by further concentration.

The writer's actual results show well in the accompanying table:

RESULTS IN AUTHOR'S CASES.

Year.	No. of Cases.	Deaths.	Per Cent.	Dosage.
1908	1426	127	8.55	Very small.
1909	2153	144	6.69	First year large doses were used.
1910	1870	120	6.62	Larger doses, about as used in 1909.
1911	1895	130	6.86	Doses smaller than in 1909 and 1910.
1912	1676	101	6.02	Larger doses used.

The advantages of large doses are really greater than would appear from these statistics, which include deaths from all types of diphtheria.

The benefits to be derived from large doses are less apparent in the treatment of laryngeal diphtheria than in any other form of the disease. This is due to the fact that practically all cases of this variety are sent to the hospital only when far advanced and because the condition then to be combated is not a toxemia, but rather a physical one, due to the location of the membrane. The writer has to deal with principally a mechanical obstruction to the intake of air resulting in insufficient oxygenation. These deaths are due to asphyxia and exhaustion or to bronchopneumonia, and not to the toxemia of diphtheria.

In the writer's tables this number of laryngeal cases always influences the death rate. Were he able to show the results of large doses of antitoxin when the toxemia alone must be dealt with, his figures would be even more favorable.

In the septic types, aside from the great satisfaction of feeling that the doubt as to the ultimate outcome has been set aside, the writer has also the comforting knowledge that by the use of large doses of this specific he has brought to a minimum the chances for the development of that most dreaded of all complications, postdiphtheritic paralysis.

The occurrence of serum sickness and serum rashes is not a bar to the use of large doses. The rashes, however, are frequent, having occurred in 43.4 per cent. of 1,000 carefully analyzed cases.

Of these, 0.3 per cent. was scarlatiniform, and 1 per cent. morbilliform. In 11.2 per cent. no variety was stated, and in 30.9 per cent. the rash was urticarial. The appearance of the rash was as early as a few hours and as late as several weeks. The writer has never observed dangerous or alarming serum sickness, though a few of the patients have become painfully ill and remained so for as long as a week.

Since, then, there is no bar to the use of large doses, there remains but a summary of the writer's results with their use. These results are:

1. Prompter local cure.

2. Quicker improvement in the patient's general condition.
3. Permanence of curative action.
4. Avoidance of complications.
5. Reduction of mortality.
6. Harmlessness of large doses.

The writer doubts, indeed, whether he has as yet used diphtheria anti-toxin in doses that give its full therapeutic efficiency.—*Therapeutic Gazette*, January 15, 1915.

VACCINE TREATMENT IN PERTUSSIS.—Hartshorn and Moeller, in the *Archives of Pediatrics* for August, 1914, reach those conclusions from the literature reviewed: 1,445 cases were observed and reported.

1. There is not a universal indorsement of pertussis vaccine.
2. A variety of vaccines are being used without definite knowledge of the bacteriology of the individual cases treated.
3. There is a striking lack of negative reports.
4. Apparently the vaccine is harmless in uncomplicated cases.
5. There has been established no definite standard for dosage or for treatment.
6. The dosage generally used has been apparently too small.
7. The course of the disease in the majority of cases reported has not been much under six weeks.
8. Its value as a prophylactic agent is still undetermined.
9. It is generally conceded that the earlier the treatment is given the better the result.
10. The vaccine treatment is worthy of a more extensive trial.

Conclusions drawn from the treatment with vaccine of eighteen of Hartshorn's and Moeller's cases of pertussis:

1. A certain number of cases will respond favorably to the commercial vaccine.
2. Where a commercial vaccine has not proved successful it would seem desirable to try an autogenous vaccine.
3. The initial dose should be at least 50,000,000 in older children, and this may be doubled at subsequent treatments up to 400,000,000 at five-day intervals. Further observations regarding dosage indispensable.
4. A certain number of cases will not respond favorably to a vaccine, and in those it should not be continued after a trial of four doses.
5. The relative value of the combined vaccine as compared to the single culture vaccine is undetermined.
6. In that the improvement in a few cases was immediate and striking, it seems fair to suggest but not to recommend its use.

THE USE OF BOILED MILK IN INFANT FEEDING.—Dr. Roger H. Dennett, (*Journal A. M. A.*, December 5, 1914) gives the following conclusions in regard to this important subject:

1. Clinical evidence of the comparative usefulness of boiled and un-boiled milk in infant-feeding is of value and desirable.
2. The prolonged use of boiled milk if properly administered does not necessarily cause nutritional disorders such as rickets, anemia, malnutrition or poor musculature.

3. Scurvy may be avoided when boiled-milk feedings are given, by the administration of orange juice.
4. Boiled milk does not cause digestive disturbances in normal infants, and is, therefore, not more difficult to digest than unboiled milk.
5. Boiled milk aids us in overcoming digestive disturbances.
6. The change from boiled milk to unboiled milk may or may not cause digestive disturbances.
7. Boiled milk is probably more apt to cause constipation than unboiled milk, but in certain cases the constipation may be overcome while on boiled milk, although it is not always overcome when the boiling is stopped.
8. The evidence is not conclusive whether the value of the milk is lessened by boiling or not.

VAN A. H. CORNELL, M. D.

INFANTILE SCURVY.—Alfred F. Hess, M. D., and Mildred Fish, New York, in a study of Infantile Scurvy, have considered the subject from a somewhat unusual point of view. The dietary causes are included but the blood and blood vessels receive most of their attention. The following summary reviews their findings:

Infantile scurvy is a disorder characterized clinically by hemorrhage, for example, the classical bleeding into the gums and the sub-periosteal hemorrhages of the long bones. A study of the cause of this bleeding, which must include a consideration of the clotting-power of the blood, forms the nucleus of this investigation.

For the coagulation tests blood was aspirated directly from the blood vessels and oxalated. This plasma showed a slight diminution in clotting-power. This defect did not seem, however, to be the result of an insufficiency of calcium. The antithrombin was not increased.

Small amounts of blood were also obtained by puncture of the finger. Examinations of this blood revealed a normal number of blood platelets. In other respects the picture was that of a simple secondary anemia, except that the hemoglobin was diminished out of proportion to the red blood cells. A marked regeneration of these cells during convalescence, leading to a polycythemia, was also noticed.

These various departures from the normal are insufficient to account for the hemorrhages associated with the disease. The integrity of the blood vessels was therefore investigated by means of a device which may be termed the "*capillary resistance test*." This test consists in subjecting the capillaries and vessels of the arm to increased intra-vascular pressure, by means of an ordinary blood pressure band, and of observing whether this strain results in the escape of blood through the vessels—the appearance of petechial hemorrhages into the skin. The vessels of normal infants were found to withstand, without apparent disturbance, 90 degrees of pressure for three minutes, whereas the vessels of infants suffering from scurvy, gave way under this pressure. The test is not specific for scurvy, but is a method of demonstrating a weakness of the vessel walls, whatsoever may be its cause.

In the course of an exceptional opportunity to observe scurvy in its incipency, numerous petechial hemorrhages of the skin or mucous membranes were frequently noted as one of the earliest signs of the disease; no

sign, however, should be regarded as pre-eminently the primary symptom of scurvy.

It is generally recognized that scurvy has not only an exciting cause, but a predisposing cause. *The well-known "exudative diathesis" of Czerny was found definitely to predispose to the development of scurvy.* Whether there are other predisposing factors remains to be determined.

Several cases of scurvy developed in infants who were being fed on milk which was pasteurized to 145° F. for thirty minutes. They were cured by receiving fruit juices or raw milk.

Orange juice was found not to lose its efficacy as the result of being boiled for ten minutes. The juice of the peel was successfully substituted as an antiscorbutic for the juice of the orange.

Potato proved to be an excellent antiscorbutic. It is suggested that it be added to pasteurized milk as potato-water instead of the barley-water which is now commonly used as a diluent. In this way the necessity will be obviated of giving orange juice.

Cod-liver oil or olive oil, although given for weeks, did not prevent the development of scurvy.—*American Journal of Diseases of Children.*

VAN A. H. CORNELL, M. D.

EYE DISEASES AND AUTOINTOXICATION.—Dr. Clark W. Hawley stated that many eye diseases are cleared up by urinalysis showing that the system is absorbing toxins from the lower bowels, whence they are absorbed into the circulation. The level track of the eye, on account of its exceeding vascularity, is a very good stopping point for any wandering toxic material, and thus we have iritis, cyclitis, choroiditis and other inflammatory manifestations.

The diagnosis is made through a very careful analysis, there being two main abnormal conditions which must be taken into consideration: First, acidemia, and, second, evidence of poisonous extractives present, as indican, indol and skatol. The treatment consists in a most thorough cleaning out of the lower bowels at regular intervals. For flushing out the lower bowel he uses three pints to two quarts of water at 110°, and in some cases a second flushing immediately follows with the temperature at 120°. A tablespoonful of salt is added each time and the time allowed should be from ten minutes to a half hour. He reports the case of a woman who complained that her glasses needed changing. The vision of the right eye was 6-16 and the left eye 6-12, no glasses improving the vision. On examination, choroidal disease about the macula was discovered. The most painstaking care on the part of the patient in following instructions resulted in a very satisfactory improvement. A marked increase in the amount of urine passed, a decrease in specific gravity and acidity. The improved condition lasted for about five months when the extractives appeared again, due to a partial meat diet. The choroidal disease was again arrested and the vision improved two lines. The mental and general bodily condition have markedly improved.

Another case had recurring attacks of iritis and an analysis of the urine showed a high acidemia and indican present. He was at once put on proper diet and treatment, since which time he has had but one attack, and that was brought on by not following the prescribed diet.

In concluding, Dr. Hawly stated that in every case where he had suspected autointoxication to be the cause of the eye symptoms, with the co-operation of the patient, success had followed the treatment and he feels sure that autointoxication explains many indefinite symptoms of eye strain.—*Archives of Ophthal.*

WILLIAM SPENCER, M. D.

GLAUCOMA FOLLOWING CATARACT EXTRACTION.—The patient, a man aged fifty-three years, was admitted to the hospital with a history of failing vision in the left eye for nine or ten years, and the right eye for five years.

Diagnosis: Right eye, immature cataract; left eye, mature senile cataract; pupil of left eye reacted normally; perception and projection good. On June 23d, an extraction of the lens of left eye was performed, following an iridectomy of about five or six millimeters wide with little reaction following. July 15th, vision 1-200, with a + 11.00=20-40. There was a very thin capsule in the papillary area. He was needled July 22d. July 25th, with a + 11.50 he had vision 20-20 and that was the lens prescribed for him.

About the end of November the tension was taken with a tonometer and it varied from 29 to 40,—at one time going on as high as 44. Eserin sulphate and pilocarpin seemed to have little effect. February 2, 1914, the tension was 53½ and a scleral trephining was done below the peripheral iridectomy twenty-four hours later. There was moderate ciliary injection and the wound drained nicely.

February 6th, ciliary injection almost entirely gone, wound well drained and no pain. February 14th, vision in left eye 20-40. February 18th, the patient could not see the electric lights in his room and vision was reduced to fingers at about ten inches.

Examination showed large brownish mass on the upper temporal side. Diagnosis was made of detached choroid. The patient was put to bed, eye bandaged, light diet ordered and dionin used in the eye. There was no pain, and after ten days the reattachment was complete, with vision of 20-30. In two weeks it was 20-20 + and now it is about 20-15, with tension normal.

The author said it would be interesting to have statistics of cases of trephining without iridectomy so as to know whether detachment ever follows that operation.—*Annals of Ophthal.*

WILLIAM SPENCER, M. D.

HEREDITARY GLAUCOMA (SIMPLEX).—Heredity is recognized as a common factor in the causation of glaucoma, both of the inflammatory and non-inflammatory type. As an hereditary type glaucoma simplex is exceptionally rare beyond the second generation. The author has been able to find recorded only four other families besides the one reported. In his family, one of the first generation had glaucoma; three, or possibly four, out of the five children had the trouble in the second generation; while in the third generation, four, or possibly five, out of the six had it. In summarizing the reported cases of hereditary glaucoma, we may say that: First, "Anticipation" is the most prominent feature. Hereditary glaucoma usually develops in adults, or at an age far remote from the usual period,

and whenever a case is recognized in one under the age of thirty, the hereditary tendency should always be investigated. Second, the smallness of the cornea and globe plays an important part, though it is not the sole cause. Third, general diseases, other than gout and rheumatism, are a small part in the causation. Fourth, the liability to transmission by the two sexes is roughly equal. The male sex shows a greater liability to inheritance.—*Dr. F. Phinizy Calhoun, Jour. A. M. A.*

WILLIAM SPENCER, M. D.

THE DIAGNOSIS OF HYDRONEPHROSIS.—Hydronephrosis has an interest for the gynecologist since it simulates an ovarian cyst. Vogt (Dresden) has described two operated cases, and says the differential diagnostic signs between ovarian cyst and hydronephrosis are: Ovarian tumors can usually be outlined above, while in hydronephrosis there is usually a rounded outline below. If both ovaries can be recognized by bimanual examination, the growth probably springs from the kidney. If the large bowel becomes distended, it may be recognized by percussion to lie toward the median line and below the kidney tumor, while when the growth springs from the ovary the large bowel is displaced upward and outward. This is, however, not always characteristic. Attacks of renal colic may occur in hydronephrosis; but this is not a frequent clinical symptom. The growth and development of the tumor is important. If the growth has been from above a kidney tumor is suggested, while if the tumor has arisen from the pelvis and grown upward gradually, an ovarian tumor is most likely present. The cystoscope may aid the diagnosis. If both kidneys functionate equally, a kidney tumor might be excluded. We should also keep in mind the rarer tumors of the abdominal cavity, such as pancreatic cysts, mesenteric cysts, cysts of the omentum, and encapsulated tubercular ascites.—*Zentralbl. f. Gyn.* 1914—1140.

THEODORE J. GRAMM, M. D.

PRIMARY SARCOMA OF THE PORTIO VAGINALIS.—Ehrlich (Dresden) has described a case of primary sarcoma of the cervix, and in commenting on the general subject says: In comparison with carcinoma, sarcoma is comparatively rare. This growth being derived from the stroma is not found upon the epithelial surface of the glands, but occurs on the mucous membrane or in the walls of the uterus, that is in the body, in the cervix and portio. Differing from carcinoma, the most frequent site for sarcoma is the body of the uterus. Sarcoma in the mucous membrane forms soft tumors, either polypoid or extending over larger areas in the cavity or even involving the cervix. In the uterine wall the sarcoma is a soft, submucous nodule, either localized or spreading. It may arise primarily in the myometrium or from secondary degeneration of a myoma. These new growths tend to early disintegration. A peculiar form of primary sarcoma has a grape-like structure which tends to excessive proliferation and is very malignant. Round celled, mixed, giant celled and angio-sarcoma are the forms usually seen, while the spindle celled is rare. Metastases are quite infrequent. Recurrence is unusually frequent so that the termination in cure is rare.—*Zentralbl. f. Gyn.* 1914—1142.

THEODORE J. GRAMM, M. D.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

REMEDIAL FREQUENCY.—A consideration of the frequency of use of homœopathic medicines bears more than a purely academic interest. It is quite pertinent to our actual practice among the sick and is therefore quite relevant to the curricula of the medical school, to the physician in practice, and to the patient away from his medical adviser. As far as the medical curriculum in itself goes, the student will of course be only required to know well those remedial agencies most frequently demanded in ordinary practice. This is because of the vast complexity and number of branches not dealing directly with therapeutics and materia medica itself. The polychrests and a few other remedies are carefully gone into and this forms the basis of work for the undergraduate student of medicine. If thoroughly mastered it will adequately suit, after his qualifying; and, thereafter, he may add to his practical knowledge, and even institute provings, should his fancy and affection for the subject so direct him.

As to the last named individual—the oft-called “man in the street” who is not even qualified to prescribe—this subject will even be of human interest to him. Such a one may need medical aid. He may need it with no doctor about, and he may need only aid of a non-surgical character. This most frequently applies of course to the inveterate globe trotter, who is rather leary of the any-old-Tom-Dick-or-Harry of our noble ilk who may be summoned by some solicitous friend, in case of dire necessity. Although a mere layman, the therapeutic nihilist has never quite endeared himself to his broad and catholic spirit. He is not infrequently the confidante and chum of some able and wise physician, or at least is related to the same by some tie of birth or associational relationship. A few well chosen polychrests of course interests him—and more than academically too.

Quite recently, and pursuant to this line of thought, I referred to the prescribing data of the Children's Homœopathic Hospital. As a round average of over three thousand prescriptions a month are accounted for, the dispensary lists were alone gone over, and entirely through the kindness of Dr. C. A. O. Vischer. One month's prescribing, that of December, 1914, was tabulated and the following information was elicited:

I will preface my remarks by stating that as no homœopathic prescription was requested oftener than sixty times, the lists will be arranged in groups of ten, the highest in each group starting with (a), and followed

by the number of times requisitioned. All departments were taken into account. The information disclosed may be of some service in making up small cases of homœopathic medicines.

Group I. (Medicines requisitioned from 50-60 times).

a. Sulphur.

Group II. (Medicines requisitioned from 40-50 times).

a. Hepar sulphuris calcareum (45). b. Belladonna (43).

Group III. (Medicines requisitioned from 30-40 times).

a. Calcarea carbonica (34). b. Cina (32). c. Bryonia alba (32). d. Pulsatilla nigricans (30).

Group IV. (Medicines requisitioned from 20-30 times).

a. Aconitum napellus (25). b. Mercurius bin-iodatum (24). c. Ipecacuanha (24). d. Chamomilla (23). e. Graphites (20).

Group V. (Medicines requisitioned from 10-20 times).

a. Arsenicum album (18). b. Antimonium tartaricum (17). c. Nuxvomica (15). d. Saccharum lactis (placebo) (15). e. Mercurius vivus (12). f. Arsenicum iodatum (11). g. Kali bi-chromicum (10).

Group VI. (Medicines requisitioned from 5-10 times. The list would be too bulky to place those called for from 1-5 times).

a. Gelsemium sempervirens (9). b. Arnica montana (9). c. Rhus toxicodendron (9). d. Ignatia amara (8). e. Ferrum phosphoricum (8). f. Sanguinaria (8). g. Sepia (7). h. Acidum benzoicum (7). i. Mercurius solubilis Hahnemanni (6). j. Kali carbonicum (6). k. Phosphorus (6). l. Tuberculinum (6). m. Hydrastis canadensis (5). Should a corresponding list be made up at other homœopathic hospitals it would be of interest to compare the findings so elicited with those of the Children's Homœopathic Hospital.

COFFEA CRUDA.—*Sleeplessness from over-excitability.* Great movability of the muscles and great sensitiveness to pain, driving to despair and weeping. Unusually excited feelings of health. Excessive activity of the vital powers. Aversion to the open which aggravates the symptoms. Bad effects from wine drinking, from over-joy, and from excessive excitement. Twitching of the limbs. Convulsions with grinding of the teeth and cold limbs.—*von Lippe Manuscripts.*

CLEMATIS RECTA.—Great emaciation and relaxed muscles. Twitching of the muscles. After eating weakness in all the limbs, with pulsation in all the arteries. *Painful swelling and induration of the glands. Tettery skin which are affected periodically.* Sexual desire diminished. Constriction of the urethra.—*von Lippe Manuscripts.*

CICUTA VIROSA.—Twitching, especially in the extremities. Convulsions and tonic spasms. Spasmodic complaints, especially in women. Shocks as from electricity through the head, arms and limbs. Worm complaints in children, with spasms. Pains as from contusions or falls on many parts of the body. Burning pains. Burning and moistening eruptions. Chilliness and desire for heat. Consequences of concussion of the brain (spasm).—*von Lippe Manuscripts.*

BELLADONNA.—Fantastic delusions, rage, loss of consciousness and de-

lirium. Oversensitiveness of all the senses. Congestions especially of the head. Tearing in the inner parts and a sensation as if the inner parts were distended. A burning of the inner parts, with pain as if the parts would burst. Swelling of the blood vessels. Stitches in the muscles. Rheumatic pains (pressing and tearing) which wander from one place to another. Pricking in the bones or muscles. Contortions of the limbs (St. Vitus Dance). Spasms of single limbs or the whole body. Inflammation of inner parts, with a tendency to suppuration and with nervous symptoms. Involvement of the mucosa of the throat. Indurations after inflammations. Lameness and paralysis. Liability to take cold with great sensitiveness to a draught of air. Bad effects of fear and chagrin. There is an aggravation in the afternoon and evening, from touching the parts even softly, during sleep, and whilst swallowing. There is amelioration whilst reposing or standing.—*von Lippe Manuscripts.*

R. C. CABOT ON TUBERCULINUM.—“The use of tuberculin is a form of vaccination which illustrates, better than any example known to me the approval of homœopathic principles within our school. Tuberculin is, of course, not an antitoxin, but a toxin, and its therapeutic use is a form of vaccination. Surely this is a case of *similia similibus curentur*, as homœopathic writers have pointed out. The use of bacterial vaccines in infectious diseases recently produced by A E. Wright is distinctly homœopathic.”—*R. C. Cabot, Harvard Medical School.*

At the last meeting of the Clinico-Pathological Society there was presented a case which may prove of interest to the general practitioner as well as neurologist:

Emma B.—Family History. One sister dead of catamenial trouble. A brother dead of lead-poisoning and enteric tuberculosis. The father dead of pneumonia at 60 years. The mother died of old age.

Personal History. The woman uses beer in great moderation. She is unmarried. Her menstrual history is quite regular.

History of Present Illness. The woman became run-down whilst nursing her mother. She was under a nervous strain about her mother who went through five strokes without losing consciousness. The night vigils told on the nursing daughter. About four years ago swelling was noticed on the right side of the neck. It commenced as big as a hazel-nut and progressively got larger until when the writer saw her at the dispensary of the Children's Homœopathic Hospital it was a pulsating tumor the size of a hen's egg. At this time the woman was dreadfully nervous and was also laboring under the disability of a severe neuritis which crippled her to such an extent that she could not raise the arm to comb her hair in the morning on account of the pain it induced which she described as intense. She had marked tremors of the hands which were even noticed by her brother. Just after the death of her mother she had become very melancholic and was extremely costive and suffered greatly from headaches. She had fallen away in weight considerably and complained a great deal about gaseous eructations and what her brother called gastritis. This in fine was her state when the writer saw her four months ago. She had been under old school care with Dr. W. H. C. up to that time, who had

given her four bottles of medicine with the request that she be operated upon in case of no betterment. But as the idea of the so-called "collar-operation" frightened her terribly she sought treatment elsewhere, which in her case turned out to be the Children's Homœopathic Hospital.

Realizing that she was suffering from a thyroid intoxication my mind curiously enough reverted to the Hahnemannian dictum: "Similar symptoms in the remedy remove similar symptoms in the patient." Miss B., therefore, was put on the 30th dynamization of the thyroid gland of a sheep and told to take the same every two hours. She has taken this now during her waking hours for four months steadily and her neck is now practically normal in size, her nervousness has vanished, her costive state is practically a thing of the past, and the writer may add the woman is a very grateful patient.—*Donald Macfarlan.*

IN an old edition of *The Homœopathic News* a slim-leaved medical gazette, years ago under the joint editorship of Adolphus von Lippe and his friend Constantine Hering the writer came across an old comparison of two well-known remedies which have much in common symptomatically—the *rhus toxicodendron* and *rhododendron*. The findings follow:

Both have rheumatic pains, especially in all the aponeuroses; worse when at rest; worse at night.

(1) *Rhododendron*. Pains do not admit of the limbs being at rest; desire to move, and moving, relieves. (F. Husmann, C. Hering.)

(2) *Rhus*. Rest occasions uneasiness in the painful parts, but, on moving, the pain is worse. (C. Hering, Neidhard.) Continued motion only relieves.

(3) It is known that *rhododendron* has general aggravation of pains before a change in the weather—particularly before a thunderstorm—even in dysentery indicated by this. (C. Hering.)

(4) *Rhus*. Has aggravation from the warmth of the bed, and as a general characteristic; in consequence of stretching, over-lifting, over-exertion of joints, etc., or from getting wet while perspiring.

(5) Acts more on the right side; and, according to Boeninghausen, *rhus* more on the left.

(6) There is not much known about the direction of either; or which side is first affected, and which afterwards. Cases cured would be worth recording, if the order of sides had been observed. Provers ought to do the same.

(7) *Rhododendron* has aggravation of pains in the night, but more towards morning; *rhus*, more towards evening and night.

(8) *Rhus* corresponds to rheumatism in the cold season; *rhododendron* in the hot season. *Rhododendron* worse before, and *rhus* worse after, rain.

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HYOSCYAMUS AS AN ADYNAMIC FEVER REMEDY.

BY

O. S. HAINES, M.D., PHILADELPHIA.

It has been generally admitted that Hyoscyamus does not produce the intense and prolonged congestion and inflammation of the brain that one finds in both Belladonna and Stramonium. In the works devoted especially to the grosser physiological effects of these drugs, one reads that while both Belladonna and Hyoscyamus effects are marked by a stage of stimulation of the central nervous apparatus, this stage is evidently much less in degree and much shorter under Hyoscyamus; and, may indeed sometimes be absent. The Hyoscyamus may then prove to be merely a depressant to the central nervous apparatus and may produce drowsiness and sleep.

It must however be admitted that, as a rule, this stage of depression with its drowsiness and final stupor, will be preceded by a recognizable, although shorter stage of excitement in which agitation, confusion of mind and perhaps delirium may be noted.

It is also true that in the very exceptional case, one may have a most violent and maniacal form of delirium to contend with. I have in my mind one exceptional typhoid, in which after a rather large single dose of Hyoscin hydrobromate, the man became so violent as to require the combined efforts of four attendants to safely control him. His violent struggles were relieved by very minute doses of the same drug given at frequent intervals.

Hyoscyamus is one of our very useful remedies in the treatment of typhoid fever. It is a remedy that we appreciate the more, because it suits a typhoid picture a little out of the ordinary; the picture that keeps one on the anxious bench regarding the safety of the patient. Now in the Bryonia picture or even in the Rhus tox. case, we are generally dealing with a type of typhoid that is running along a rather even and uneventful course. We say of such cases—"it seems to be doing as well as could be expected"—and tediousness is the only source of anxiety. We cannot say that of the Hyoscyamus picture. We may say rather that the patient is much too ill to be considered safe. His typhoid takes usually one of two courses.

First:—His delirium and nervous symptoms are in excess of what we usually have seen, and they alarm us. Tremulous weakness and an unusual degree of twitching of the tendons are present. Subsultus tendinum is excessive. The face is pale and it and the bodily surface may be cool; yet the temperature may be high. The tongue is dry, red or brown, and very stiff and immovable. The patient is mumbling constantly, picking at flocks in the air or the fingers are crawling in that jerky trembling way over the bed coverings, as if searching for something. We say of this picture: "The nervous system is bearing the brunt of the toxæmia," and we are not reassured when we find a weak systole and a feeble pulse. Hyoscyamus comes in very nicely here. It may not clear up such a condition at once; but, it modifies it for the better, in many instances.

If the Hyoscyamus does not take hold of such a picture; and the outlook grows graver, the patient twitching and trembling and breaking out into a profuse sweat; I have always changed to our Agaricin. Usually it has been effective.

Second:—The other Hyoscyamus picture comes later in the course of typhoid I think. It is a deeply stuporous state, showing well the adynamia and the ever present tendency towards cerebral paralysis. The stupor is of the deepest kind, the lower jaw dropped, the stool and urine passing involuntarily. Such a picture as will suggest to you besides the Hyoscyamus, remedies like Opium, Lachesis or Muriatic acid. The muscular twitchings and the trembling are more pronounced in the Hyoscyamus case.

The first picture that I have outlined often drifts into the second; or we may observe certain features of the second already appearing in the first; as where urine and stool pass involuntarily even in the earliest stages of the disease.

It is not at all necessary that this adynamic and prostrated condition, shall bear the nosological title of typhoid fever, in order that it shall be helped by *Hyoscyamus*. Almost the same clinical picture occasionally occurs during the course of an exceptional or unusual type of *Pneumonia*. Here the *Hyoscyamus* takes the place of *Phosphorus* when the nervous symptoms and the *adynamia* justify the change.

In exceptionally severe types of *pneumonia*, one may sometimes derive more help from *Hyoscyamus* or *Rhus tox.*, than from other remedies.

We should say a *pneumonia* that tends to become adynamic and typhoid like, soon after its beginning. Consciousness is clouded, the patient lies trembling, muttering and picking at flocks. The stools and urine pass involuntarily and the tongue has dried and become stiff. The final differentiation of *Hyoscyamus* and *Phosphorus* is a matter of difficulty unless one is willing to avail himself of the assistance of the *Repertory*.

SUB=ACROMIAL BURSITIS.

BY

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Not every one has access to the original contributions on this subject which have been published by Drs. Codman and Painter, and the majority of text-books dismiss this important condition in a few words; this article has been undertaken, not with the idea of adding anything new to the literature of this subject, but with the hope that more physicians will become

acquainted with this condition, which so often destroys the function of the shoulder.

The works of the authors above mentioned have been largely drawn upon for material as well as has Cabot's Differential Diagnosis, and full credit is here accorded to these investigators; the endeavor has been made to give this matter in concise form so that benefit may be derived from a study of the same.

This lesion, one of the most common affections of the shoulder is worthy of much more consideration than it gets, particularly when we reflect on the number of cases which are diagnosed and are treated as sprain, paralysis, rheumatism, etc. Even though comparatively little has been written about this condition, it is more common than the similar afflictions of the bursæ of the knee and elbow, which have been commonly described under the names of housemaid's knee and miner's elbow. Of 353 cases of brachial pain analysed by Cabot in his Differential Diagnosis, 57.5% were due to sub-acromial and sub-coracoid bursitis.

ANATOMY.

A few words in regard to the anatomy may serve to fix the subject in the minds of all and clear up some points for those who have not studied the relations of this region.

This serous sac lies above the shoulder joint and is bounded as follows:

SUPERIORLY.

- Outer end of the clavicle.
- Acromion process of scapula.
- Coraco-acromial ligament.
- Deltoid muscle in outer part.

INFERIORLY.

- Supracinatus muscle.
- Capsule of shoulder joint.
- Great tuberosity of the humerus.

Normally this sac is very thin and has been described as the sub-deltoid or the subacromial bursa; some anatomists claim that there are two distinct bursæ, but recent investigators show only one and prefer to call that the sub-acromial; this bursæ

may be sub-divided by septa, which convert it into two separate cavities, or more.

It is roughly circular in outline, sometimes trilobate like a clover leaf, about two and one-half inches in diameter, and does *not* communicate with the shoulder joint. It is firmly attached to the surrounding structures and normally contains a few drops of serous fluid. In some cases it communicates with the sub-coracoid bursæ, which lies between the coracobrachialis and subscapularis muscles.

An important point is the fact that the tendon of the Supraspinatus muscle is attached to the bursæ.

In adduction of the arm approximately $\frac{1}{3}$ of the sac projects beyond the outer edge of the acromion process; in abduction this is much less, the bursæ being carried under the acromion by the greater tuberosity of the humerus.

A very natural question might be asked as to what is the use of this bursæ? Were it not for this serous tissue, in abduction of the arm, the greater tuberosity of the humerus would strike upon the acromion process and would tend to carry a portion of the deltoid muscle under it. It also plays an important part in the rotation of the arm, particularly external rotation.

PATHOLOGY.

Being a serous cavity or space, this structure is subject to the same conditions which are found in other serous cavities, such as other bursæ, joint cavities, tendon sheaths, pleura and peritoneum.

These pathological changes consist of congestion, roughening of the serous surfaces, thickening of the entire membrane, accumulation of serous fluid, fibrin formation and production of adhesions.

Infection may take place with formation of pus depending upon the organism present.

Caseous degeneration takes place in some of the chronic cases as well as partial or complete calcification, the principal salts in these cases being carbonate and phosphate of calcium.

Partial rupture of the tendon of the supra-or infra-spinatus or both may occur in some of the traumatic cases, as well as chipping of osseous fragments from the greater tuberosity of the humerus. All lesions involving the shoulder joint probably

also involve the bursæ, to a greater or less degree, but the reverse is not true.

ETIOLOGY (CODMAN).

Trauma.

1. A direct blow on the point of the shoulder, *e. g.*, a fall.
2. A sudden muscular exertion, *e. g.*, the effort to protect oneself from falling.
3. Pressure, *e. g.*, a misapplied bandage.
4. Over use, *e. g.*, as in a base-ball pitcher.
5. Unaccustomed use, *e. g.*, base-ball without proper training.

Fixation.

1. Following the treatment of the above minor lesions.
2. Following operations on the breast, hand and arm.
3. Following treatment of fractures of the hand or arm, especially fracture and dislocation of the head of the humerus.

Sepsis.

1. Non-suppurative infection:
 - a. Acute rheumatism.
 - b. Gonorrhœa.
 - c. Grippe.
 - d. Idiopathic cases.
2. Suppurative.
3. Tubercular.

CLASSIFICATION (CODMAN).

Clinically we find four types of cases:

1. Acute.

Reflex spasm, allowing only a small amount of motion (rotation) at the shoulder without rotation of the scapula. This motion amounts to 10%.

2. Actual adhesions instead of muscle spasm, may or may not have pain.

Diagnosed only by full surgical anesthesia.

3. No limitation of motion, but pain on motion.
4. Severe traumatic cases in which rupture of supraspinatus or infraspinatus muscle occurs or a portion of the greater tuberosity of the humerus is torn off.

In all cases of shoulder trouble the first step should be an X-Ray examination, and the interpretation of the plate by an

expert. In chronic cases with calcification, the bursæ may throw a shadow.

SYMPTOMS.

Pain in the shoulder is an almost constant symptom and is particularly worse at night. This pain varies from a dull ache to a sharp stabbing pain, radiating from the point of the shoulder to the external condyle of the humerus, and passes along the inner and outer border of the biceps muscle. In some cases the pain extends even as low as the hand.

This pain is worse on attempting to move the arm; the movements of abduction and external rotation cause the most severe aggravation, the height of which occurs at the moment when the greater tuberosity of the humerus passes under the acromion process of the scapula.

The cause of this symptom is due to the fact that we have two inflamed serous membranes rubbing against each other; if effusion occurs the pain becomes less or may disappear altogether. We have a similar condition to that which occurs in pleurisy with effusion.

In some cases we have the pain coming in paroxysms, between which attacks we have periods of painlessness.

Limitation of Motion.

It is characteristic of sub-acromial bursitis that a small amount of painless motion is possible; this amounts to 10%. This is possible because the humerus can move through this range before the inflamed area of the bursæ is called into action.

Antero-posterior motion is less limited than abduction and external rotation, which are almost completely lost.

This limitation of motion is due to muscle spasm, and is a conservative process to protect the patient from pain.

Tenderness.

Local tenderness may allow us to map out the bursæ; tenderness at the point of the shoulder, or in the region of the bicipital groove. In rupture of the supraspinatus and infraspinatus tenderness is greatest on the greater tuberosity of the humerus just external to the bicipital groove.

Crepitus.

This sign is found in many cases; it is best discovered by abducting the arm or by rotating it externally.

Atrophy and Deformities.

In cases with actual adhesions we may have atrophy of the deltoid, supraspinatus, and infraspinatus. Secondary changes in the nerves may take place, and in severe cases contractions of the forearm and of the fingers occur similar to the contractions found in Volkman's Paralysis.

Neuritis.

Codman says that sub-acromial bursitis is the most common cause of brachial neuritis.

Temperature.

Normal except in cases of infection.

Differential Diagnosis.

Fractures and dislocations.

History of accident, and X-Ray serve to tell us of these conditions.

Atrophic and Hypertrophic Arthritis.

Other joints are involved to a greater or less degree, and the X-Ray will show the changes which have taken place.

Infectious Arthritis.

Previous lesion somewhere else as an attack of gonorrhœa, tonsillitis, grip, or pneumonia, etc. Chill at time of joint involvement followed by fever, severe pain in joint, and absolutely no mobility. Leucocytosis present.

Rheumatism.

Should never be diagnosed; cases so called are generally some form of arthritis.

Axillary Abscess.

Chill, fever, deep throbbing pain and deep tenderness in axilla; induration of tissue over the area. Leucocytosis. Pain on slightest movement.

Circumflex Paralysis.

History of some cause for the paralysis. No contraction of the girders of the deltoid on attempting abduction of the arm.

Arthritis of Acromio-clavicular Joint.

Tenderness over point of the articulation.

Tuberculosis Involving the Shoulder Joint.

If history of an accident is obtained we generally find that the original condition subsided, and then in about three to four weeks the present condition began. Tuberculosis elsewhere. Loss of weight, anemia, slight temperature $99\frac{1}{2}$ in afternoon, atrophy of shoulder muscles; not as much motion as we have in the subacromial cases (10%). Von Pirquet tuberculin test positive. X-Ray. Family History. Leucopenia.

Neuritis.

History of some sort of intoxication; such as history of Gout, Rheumatic fever, Auto-intoxication, Alcohol, Metallic poisons, Diabetes, Syphilis, nerve trunks are tender. Disturbance of pupil of same side may be present, due to involvement of cervical sympathetic.

Rupture of Supraspinatus Tendon.

The supraspinatus muscle holds the head of the humerus in apposition with the glenoid fossa of the scapula during abduction of the arm; if this tendon be ruptured then we have the head of the humerus slipping upward to strike the acromion process when the arm is abducted; this slipping can be felt with the hand on the shoulder.

Cervical Rib.

Presence of a mass above the clavicle; pain in the region of the brachial plexus. The X-Ray gives the positive evidence.

Sarcoma.

The upper end of the humerus is a frequent site for the development of sarcoma. The X-Ray gives the most information, but the other symptoms to be looked for include anemia, loss of weight, and enlargement of the axillary glands on the same side. Enlargement of the arm with induration, and marked prominence of the veins over the affected part.

Syphilitic Disease of the Bone.

History and presence of scars upon the body. Pain not as severe as in other conditions. Enlargement may or not be

present, but there is bilateral adenopathy. Wassermann reaction positive. X-Ray.

TREATMENT.

During the acute stage. Cold compresses, rest with the arm in a sling and medication has given relief. After the acute stage has subsided, manipulation to break up the adhesions, followed by massage, electric light baking, passive and active exercises have given satisfactory results in most cases. In very few cases we have after breaking up the adhesions, applied a plaster paris splint with the arm in extreme abduction for 24 hours.

In some instances the cure has required months of persistent work and no little suffering on the part of the patient. The following cases reported briefly will give an idea of the symptoms, physical signs and treatment with the result obtained.

Case 1. Miss B. Age 16 yrs. 11/16/07.

Slim, poorly developed girl, who has grown rapidly, frequently has crepitation and ache in the wrists, ankles and shoulder. The shoulder ache increasing after arm activity, worse in the right than the left. This ache or dull pain extends over the deltoid region and down the outer side of the arm to the elbow. There was marked fine crepitation and some muscle spasm with attempted abduction, and inward rotation. Forward extension good and not painful. This condition had existed several months. As the condition was not an acute one electric light baths were given to the shoulder, followed by cold application and massage. Later exercises were given for a period extending over several months, not only to increase the arc of motion, but to increase the strength of the arms, shoulder and back. The patient completely recovered.

Case 2. Mrs. L. Age 55. 10/7/09.

Complaint, pain in the left shoulder, 3 months duration, following striking the shoulder against the side of the door in a car 3 months previously. Has pain and weakness in the left shoulder. P. E. Palpation shows sensitive spot over the deltoid region, patient holds the shoulder rigidly and carefully in muscle spasm, forearm supports the right hand. There is no motion in abduction without producing scapular motion. Slight motion on forward extension with increasing pain, no

motion on inward or outward rotation because of muscle spasm. Two days later under gas was manipulated and adhesions broken. This was repeated three times within two weeks. Daily treatments of electric light baking and massage for 6 weeks with continued improvement, though shoulder still painful. Extension and abduction exercises were given and continued at home until January of the following year. Last seen 2/6/10, normal arc of motion in all direction, could comb her hair and hook her skirts, which seems to be the greatest difficulty in these cases.

Case 3. Mrs. W. Age 59. 8/26/10.

Fell down stairs 3 months previous and injured her right shoulder. X-Ray showed fracture of the humeral head, united in good position. There was great limitation in shoulder motions, especially abduction and inward rotation. Could not hook her skirts, dress her hair or feed herself with right hand. There was considerable atrophy of the deltoid, but no crepitation. The shoulder was manipulated under gas at two different times and marked adhesions broken up. Electric light baths and massage were given with complete relief in 7 months.

Case 4. Mrs. M. Age 41. 3/9/11.

Complains of pain and stiffness in the left shoulder of 3 months duration, no history of trauma. Had pneumonia 1 month before beginning of trouble. Cannot raise her left arm to comb her hair, but can comb it by supporting the right elbow on the dresser, cannot hook her skirts. Pain is located in the deltoid region extending down to the humeral attachment of these muscles. The pain is sometimes worse just before a storm. There is atrophy of the deltoid, muscle spasm, no abduction motion, but slight motion on adduction, forward extension and inward rotation. Can with difficulty get the left hand to the head, most of the motions seem to be from the scapula and not in the shoulder joint. Impossible to hook her waist. Gas was given and with forcible manipulation adhesions were broken up, the arm being carried in full abduction and inward rotation. Electric light baths were given daily, massage and later passive and then active motions, the treatment being continued for 2 months and was discharged cured. This seemed to be a case of sub-acromial bursitis of infectious origin.

Case 5. Mr. McC. Age 65. Occupation—Farmer. 9/19 11.

Complains of a stiff and painful shoulder, duration 3 months following a trauma. He is subject to occasional attacks of epilepsy. During one of these attacks fell and struck right shoulder, following which had pains with increasing stiffness of the shoulder. Is unable to raise arm, or use it, arm is weak and painful both night and day. The X-Ray was negative. scapula moves freely with attempted shoulder motions. R Gas and forcible manipulation for breaking up the adhesions. Arm was put up in extreme abduction with plaster splint. Splint removed 4 days later and arm placed in adduction at the side for 24 hours, then splint was removed and arm manipulated. The arm was manipulated slowly, but through an increasing arc of motion daily; after that electric light baking and vibration for 2 weeks. Then exercises were given and the patient was discharged 3 weeks after beginning treatment, greatly improved and to continue the exercises at home. Ultimate recovery.

Case 6. Mr. A. A. Manufacturer. Age 44. 9/28/11.

Complained of pain in left shoulder of gradual onset, 4 years duration, caused by trauma. He was thrown from a horse, both rider and horse fell, patient unable to get up immediately, was stunned. Did not complain of shoulder at that time. Resumed his regular work without trouble. 1 year after the accident whole shoulder and arm felt weak and began to feel pain at night at the end of the acromial process of the left shoulder. Thought it was rheumatism. This disappeared for 3 years, then had various treatment. Pain and ache continued to increase. Stopped treatment for 1 month and shoulder seemed to improve. Now notices pain with shoulder abduction or rotation. Past history is otherwise negative. Examination shows a well built man of good musculature. Atrophy of the left deltoid, square appearance. All passive shoulder motions are free. There is limitation in forward extension and side abduction, pain and tenderness being at the tip of the acromial process. X-Rays show deposits in the sub-acromial bursæ. Shoulder manipulation, adhesions broken up. Later incision was made over the deltoid muscle, fibers separated, bursæ opened and considerable amount of whitish material of the consistency of tooth paste was removed. The

bursa was dissected out, muscles and skin closed separately with plain cat gut and dressings applied.

Passive manipulation begun 4 days later, and increased. A month later had electric light baking, massage and manipulation. At this time had gas anæsthetic, adhesions formed since the operation were broken up. Baking, massage and manipulation continued for another month when chloroform was given when shoulder was again manipulated and one or two very slight adhesions were broken up. The manipulation and massage was continued for another month. The patient completely recovered full arc of motion, though arm is weak. Seen recently, reports arm as strong as right and apparently normal.

SOME DIAGNOSTIC SUGGESTIONS IN THE DISEASES OF CHILDREN.

BY

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(Read before the Philadelphia Society for Clinical Research).

THEY say a man should profit by his mistakes; this paper is made up largely of mistakes, acts of omission and commission on the part of myself as well as on the part of others with whom I have come in contact. It is written in a sort of epigrammatic fashion and whilst the remarks may seem to some as trite and commonplace, I feel as though they could bear repetition if they shall be the means of preventing a few from falling by the wayside in their medical travels.

Children very rarely deceive except as they approach the adult type.

Remember that disturbed sleep as evidenced by the child awakening frequently may be due to faulty habits, poorly ventilated rooms or uncomfortable bed-clothing.

That a restless sleep may be the result of indigestion or intestinal parasites.

Bear in mind that excessive sleep is usually induced by the ingestion of a narcotic drug, usually a cough mixture or a soothing syrup.

Drowsiness during the day time with a disinclination to play

is usually due to the onset of one of the febrile diseases. If added to this there be a change in the disposition of the child it is strongly suggestive of tuberculous meningitis.

The only proper way to examine a child in the wakeful state is *fully undressed*.

No matter what ails the child *always examine its throat*; children invariably refer pain to the epigastrium in throat conditions. Incidentally epigastric pain may also mean pneumonia, pleurisy or pott's disease of the spine.

Do not forget that diphtheria may assume a follicular form and be very mild, from which it is almost impossible to differentiate the nonspecific types of tonsilitis.

Make a culture of every case of tonsilitis characterized by a suspicious exudate.

An exudate upon the tonsil with little or no fever is more apt to be diphtheritic than if accompanied by a high rise in temperature.

Bear in mind that pneumonia is frequently a complication of diphtheria.

Persistent repeated hemorrhage, with nasal obstruction is suggestive of nasal diphtheria.

Do not forget that a pseudo-membrane of a non-diphtheritic angina may at times be removed with difficulty, whilst on the other hand that of a diphtheria may be easily removed.

A syphilitic sore throat may resemble a diphtheria. Only a culture may decide the difference.

A follicular or lacunar tonsilitis may be secondary to a disordered stomach.

In fevers of doubtful origin, look to the middle ear.

In every case of acute fever with coryza, be sure to look for Koplik's spots upon the mucous membrane of the cheek. This is pathognomonic of measles.

Contrary to textbook teachings, fever may be caused by difficult dentition.

In acute diseases of children, fever is apt to be of the remittent type; in the chronic forms it is invariably of the intermittent type.

In fevers occurring during the summer months look first to the gastro-intestinal tract; those during the winter season, the respiratory organs.

The respiratory sounds of children are more bronchial than in adults.

Always examine the chest posteriorly as well as anteriorly. Sometimes a pneumonia not discernible anteriorly may be discovered by a posterior examination.

Do not mistake dullness on the right side due to the liver for an area of consolidation.

In abdominal distention the liver may be pushed almost up into the axillary space.

Remember that in bronchial asthma the dyspnea is expiratory, while in laryngeal stenosis it is inspiratory.

Before calling in a surgeon in a case of appendiceal pain, go over the chest, especially the right side; a pneumococcic infection of the lung may be present.

Pneumonic consolidation of a part of a lobe in children may sometimes cause very little general disturbance.

Coughing may be almost entirely absent in children who have well marked physical signs of pneumonia.

Do not hesitate after excluding all other causes of fever, to make a diagnosis of pneumonia in the absence of physical signs, when the temperature remains high for several days accompanied by a suppressed cough and rapid respiration.

Bronchial breathing over a lung does not always exclude empyema. In large collections of pus however, the respiratory murmurs are absent.

The use of the aspirating needle is the only sure means of differentiating a purulent from a serous effusion.

The acute symptoms of a serous effusion are not protracted, absorption usually commences within ten days.

When an effusion has persisted longer than ten days it is as a rule purulent.

A persistent cough with no physical signs and no evidence of tuberculosis may mean bronchiectasis.

Do not forget that empyema may simulate malaria, typhoid fever or tuberculosis.

Be sure to palpate the abdomen in all cases of vomiting, especially when accompanied by crying or other signs of pain, one may be dealing with an appendicitis, intussusception or other intestinal obstructions.

Uncontrollable vomiting in the new-born persisting for days, with no other signs of illness may mean the presence of a pyloric stenosis.

In cases of hematemesis in the new-born, examine the

breasts of the mother; the child may have been nursing blood instead of milk.

Intussusception and ileo-colitis both have bloody mucous stools; the stools of the former may consist entirely of blood and be more in quantity, whilst in the latter the stools are more frequent, blood is less in quantity and usually contains fecal matter. Palpate the abdomen for a sausage like tumor.

Tenesmus and the passage of bloody stools may also be caused by rectal polypi or hemorrhoids.

Do not forget that gaseous distention of the abdomen may complicate diseases of the lung and pleura.

Remember that a high percentage of fat in milk may cause constipation with stationary or loss of weight as well as diarrhoea.

Rigidity of the abdominal muscles with iliac tenderness may be caused by a pleuro-pneumonia.

Severe abdominal pain with no fever and symptoms of indigestion suggests intussusception; if fever be present look for appendicitis.

Do not exclude appendicitis because the pain is referred to the umbilical region.

Do not forget that an over-filled bladder may cause abdominal distention.

The Babinski sign is unreliable in infants under one year of age. In children its presence is suggestive of meningitis.

Remember that Kernig's sign occurring during the course of acute fever in a previously healthy child suggests meningitis; it is very rarely found in meningismus.

Before making a diagnosis of rheumatism in painful conditions of the extremities, look into the feeding of the infant and inspect the mouth and gums. The condition may be one of scurvy.

Spastic paralyses of the extremities usually indicates a cerebral lesion, while flaccid paralyses usually signifies a disease of spinal origin.

In the spastic variety the deep and superficial reflexes are increased; in the flaccid they are lessened.

Do not be chagrined if you have failed to diagnose poliomyelitis in the acute febrile stage; there are others.

In an acute fever of obscure origin accompanied by pain and hyperæsthesia of the lower limbs think of poliomyelitis.

Atrophy of the muscles is greater in spinal and peripheral paralyses than in those due to a cerebral lesion.

In facial paralysis inspect the middle ear.

Peripheral neuritis may be mistaken for poliomyelitis: it usually occurs after acute infectious diseases or intoxications, is bi-lateral and involves all the extremities. Sensory disturbance is also present.

Frequently repeated convulsions with fever in a child who has been previously healthy suggests meningitis.

Bear in mind that laryngo-spasm which is a phenomenon of tetany, may explain "the inward or internal spasms" of the mother.

Repeated convulsions on different days without fever suggests rickets.

Bear in mind that gastro-intestinal disturbance may cause infantile eclampsia.

Convulsions from cerebral irritation are usually associated with projectile vomiting, with a possible history of trauma, tuberculosis or otitic abscess.

Remember that convulsions in children may be uremic. There is usually a history of scarlatina, suppression of urine with evidence of kidney disease in the urinalysis.

Epilepsy is usually preceded by an aura, the convulsion is of short duration and non-remittent, and is invariably followed by a profound sleep.

Children may sometimes have two attacks of measles, most commonly however one attack is the german measles.

A negative Widal reaction does not always exclude typhoid fever.

Remember that mild forms of scarlet fever are often not recognized. All forms of scarlatinal rashes and sore throats should be considered scarlet fever unless very strong evidence to the contrary exists.

A swelling immediately in front and below the ear, not distinctly circumscribed and immovable under the skin, suggests mumps.

Bear in mind that lymph-nodes in front of the ear may become infected and swollen and simulate mumps.

SEALSKIN SOLUTION; AN IMPROVED METHOD OF PREPARING THE OPERATION FIELD.

BY

W. A. VAN DERVEER, M.D., PHILADELPHIA.

MANY and varied are the preparations and methods used by surgeons in making ready the field of operation. While most of those in general use today are effectual, to a greater or lesser degree, any innovation or improvement on the methods now employed should be investigated by the modern operator.

The use of Iodine was a long step forward and it soon attained widespread popularity on account of its effectiveness, the simplicity of the preparation and the great saving in time required for that preparation. However, Iodine has its disadvantages and has already been discarded by many surgeons.

Sealskin Solution is the name given to a preparation elaborated by Dr. H. L. Northrop and Mr. Pachali, a pharmacist of Philadelphia. The name explains itself and was given to it because we believe that this solution actually seals the skin, forming an absolutely impervious, flexible coating, which remains from three to six days and often longer. It consists of Mastiche 20 grammes, Benzene 50 grammes, and Acetic Ester 20 gtts. During the past few months we have been adding $\frac{1}{4}\%$ creosol to this preparation. The Solution is easily and quickly made, the only precaution necessary being that the ingredients must be carefully weighed and filtered through a perfectly dry filter. When properly made the solution should be clear, containing no precipitate or sediment, and of a bright yellow color.

We employ our sealskin solution in the following manner: Previous to the operation the part is shaved, given a soap and water scrub and a formalin dressing (1%) is applied. At the time of operation the formalin dressing is removed and the sealskin solution generously painted over the part to be operated upon with a gauze swab held by an artery clip. Sterile towels are now applied, making the area exposed just what is desired. The solution dries in a few seconds and the operator may proceed with his work. It is not at all necessary to remove the sealskin solution. However, should you wish to remove it, a little benzene easily does the trick.

The advantages to be claimed for sealskin solution are: First (and most important), its efficiency in sealing the skin. Bacteriological experiments by Dr. G. A. Hopp have proved that sealskin solution is a sterile product and that bacteria do not penetrate it. Hence, the application of the solution treats the skin the way the surgeon treats his hands by covering them with rubber gloves. Dr. Northrop has used sealskin solution in all his private and ward cases since June, 1913, with equally good if not better results in wound healing than he had previously. The few cases in which wound infection occurred were poor subjects in which good wound healing could hardly be expected under any circumstances or with any preparatory technic. Second, its practicability and convenience. Sealskin solution does not irritate the skin; it can be easily and quickly applied, doing away with the scrubbing of the surface on the operating table, or the use of any antiseptic and hence, as a rule, dispensing with the Kelly or Morris pad. Towels applied to the operation area can be placed in any desired position and will stick throughout the operation. There is no necessity for towel clips or forceps; this advantage is especially appreciated in operations about the head and face and in rectal and vaginal work, where it is so hard to limit and protect the field of operation. Finally, the post-operative dressing adheres closely to the skin and in many cases adhesive plaster is not needed. This, in itself, is no small advantage in these days of economical hospital administration.

THE PATHOGENESIS OF ECLAMPSIA.—Vertes has made an extensive study of the pathogenesis of eclampsia, including many experiments on animals, and has published his results in two articles. The conclusions reached are that the organism in pregnancy is in a condition of anaphylaxis in consequence of resorption of tissue from the chorion. That anaphylaxis may arise from absorption of albuminoids from the villi, has been shown by the author's experiments. Eclampsia may therefore be regarded as anaphylactic shock. This is shown from clinical symptoms which display a certain similarity between anaphylaxis and eclampsia, and also by the fact that the organs of the animals used in the experiments exhibited changes similar to those in eclampsia. Albumin in the urine would also indicate that eclampsia is due to an anaphylactic condition.—*Monatsschr. f. G. U. G.* Vol. 40—466.

STRICTURE OF THE URETHRA.

BY

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ORGANIC stricture is a ring of fibrous tissue surrounding the urethra which interferes with its dilatability, later contracting and causing a narrowing of the urethral canal.

Its causes are:

1. Gonorrhœa.
2. Traumatism causing a rupture of the urethra.

Clinically two varieties are recognized:

1. Soft or recent, in which the infiltration is recent and the small round cells are not organized.
2. Hard or organized, in which cicatricial changes have taken place.

Forms of stricture are:

1. Linear, which consists of a fine band of fibres.
2. Annular, in which the band is broader and firmer.
3. Tortuous, which is composed of heavy irregular masses of scar tissue causing more or less distortion and narrowing of the canal.

As to number, gonorrhœal are usually multiple, while traumatic are usually single at the site of rupture.

The changes behind the stricture are very important, a pouch is formed which retains a drop of urine, which decomposes, irritates the mucous membrane and causes a gleety discharge. Prolonged inflammation leads to ulceration, which if small forms an abscess, opens externally and leads to fistula, or if large to extravasation of urine.

The walls of the bladder hypertrophy and the muscular fibers lose their elasticity which is followed by atony. The urine accumulates, decomposes and sets up a cystitis. Back pressure on the kidneys leads to dilation of the ureters and pelvis of the kidney. Infection follows and pyelitis or pyelonephritis develops and death follows.

The most constant symptoms are:

1. Frequency of urination due to congestion and irritability of posterior urethra. Later due to cystitis. In the later stages the bladder is distended and the overflow keeps dribbling away.
2. Dribbling after urination due to retention of a few drops of urine in the pouch behind the stricture.
3. Distorted and smaller stream.
4. Gleety discharge from meatus and shreds in urine.
5. Retention of urine due to congestion and swelling of mucous membrane following exposure to cold, alcohol, or sexual indulgence.
6. Pain in urethra is an inconstant symptom.
7. Impotence with feeble erection or premature ejaculation due to irritable posterior urethra.

Diagnosis is made by feeling irregularities in canal with flexible bulbous bougie. Meatotomy should be done if meatus is small so a fair-sized bougie may be used.

RECOGNITION OF BLOOD.

BY

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FROM scientific research, criminal and clinical standpoints, there are new and different methods for recognizing blood in excrements, clothing, tissues, etc. We have, excellent methods for the recognition of blood and seminal stains especially in warm climates. The high temperature has a two-fold action on blood and seminal stains. If the latter are kept damp they are apt to putrify,—if dry they become so insoluble as to be acted upon with difficulty by ordinary reagents. In a blood stain so altered he finds that the absorption bands of hæmochromogen can be obtained even when the blood coloring matter is in an apparently undissolved and insoluble condition by the following method:

If on clothing, cut the stain out and plunge into boiling

water for a few moments, then place on a glass slide and wet with ammonium sulphide, re-examine under the microscope and move the specimen until the whole view is occupied by a portion of the colored material. If necessary an oil immersion must be used. Remove the eye pieces and replace by a microscope. If the stain is of blood the two absorption bands of hæmochromogen will be seen. If invisible, as a result probably of commencing putrefaction, a drop of a ten percent. solution of potassium cyanide should be allowed to fall on the stain and the bands will appear somewhat nearer the red end of the spectrum than usual. The boiling is to prevent the coloring matter going into the solution and being so diluted that the bands cannot be seen. Stains on weapons or jewelry should first be wetted with ammonium sulphide. A small portion may then be scraped off with a knife and treated as above. A new method of employing a guaiac test has been introduced recently by some authors, owing to the difficulty of getting really old turpentine or good peroxide of hydrogen. Dr. Holland is especially interested in this work. He employs as an oxydizing agent, sodium perborate, made from sodium dioxide and boric acid; freshly broken pieces of guaiac resin are dissolved by boiling with alcohol in a test tube for a few minutes till the tincture is yellow. The suspected material is then cautiously mixed with a drop or two of the guaiac solution to make a milky mixture. This is brought in contact with a fragment of sodium perborate on a white plate. If the proportion of blood be large, the whole perborate turns blue in a few minutes and remains blue until the dying of the guaiac leaves a yellow residue, which changes the blue to green; if small, the white perborate turns a pale blue which becomes green as the guaiac dries. The test is simple and delicate, but is, of course, liable to the fallacies belonging to the ordinary guaiac reaction. During the famous trials of Esther Solymossi in Hungary, Radoszaw and others in Russia employed this method with famous results. Radoszaw, the murderer, was hanged in Solymossi's trial and sixteen innocent men were set free.

THE OLDEST AUTOPSY IN HISTORY.

BY

DONALD MACFARLAN, M.D.

GOETHE tells us that "Protoplasm is a peculiar juice, and most peculiar are its manifestations." He is quite right and the truth of the aphorism is at once apparent. Nowhere will its validity be more in evidence, as far as the healing art itself goes, than in the interesting field of human pathology. Pathology comes into being when function goes awry. In fact it is the direct result of functioning gone mad and running amuck and its last confirming disclosure is always settled at one spot, which proves to be the table in the mortuary or dead-house. Interest in the case about to be described should be of more than passing interest. It affords an insight into the value of pathology one hundred and thirteen years after death, it confirms the correlation of clinical history with microscopy, and it incidentally shows that Republics ever are ungrateful.

It was due entirely to the nobility and perseverance of Horace Porter that the remains of Admiral John Paul Jones, the greatest as well as the most picturesque of all naval commanders, was finally convoyed to our shores and honorably interred with fitting honors at Annapolis after one hundred and thirteen years of abysmally cool neglect and indifference. His clues to the finding, in an old cemetery for the interment of foreign Protestants dying in Paris, the ransacking of old records, etc., are all highly interesting and may be read in many large libraries but these things will not be touched upon here; only the reports of the French experts with their precise detail.

REPORT OF DOCTOR CAPITAN.

The opening of the coffin took place April 9th. I will not dwell upon the particulars, either as to the care exercised in putting it in the coffin or of the clothing, having specially to concern myself with the anatomical branch. The consistency of the tissues, their aspect, even their special odor enables one to affirm quite surely that the subject was preserved in alcohol or an aromatic alcoholic liquid without its having been

subjected to any other preparation, for it presents no traces of any incision having served to inject any liquid whatever into the veins, according to the present process of embalming. Besides, as we shall see later on, the viscera are intact.

In the first place, the corpse had been probably completely, and at all events surely over the hands and feet, covered with tin-foil, carefully applied upon the tissues. We found it there. It is, besides, a process still in use at the present day. Once clothed in its shirt and wrapped in its winding sheet, the corpse was placed in a solid leaden coffin; then the empty spaces were carefully stuffed with hay and straw, probably rendered aromatic. The whole must have been immersed in alcohol or an alcoholic mixture and the lid soldered, which could be easily done by soldering the edges of the lid turned over and hammered down. A small orifice of about 2 centimeters diameter had been made at the top of the lid, over the head. It might have served, also, to introduce alcohol, or at least to complete the supply introduced and to admit of the escape of air or gas after or at the time of closing the coffin. This small orifice was closed with solder at the time of burial.

Under those conditions and according to the information which had been furnished by the employees of the amphitheatre, accustomed to prepare corpses, a slow saturation takes place—of the muscles first, then of the viscera themselves, which causes their perfect preservation.

The teguments in fact, of a brownish grey, had retained their flexibility. They were notably contracted. The muscles were of a brownish gray also, strongly saturated with the preserving liquid. They had the odor of anatomic specimens long preserved in alcohol. The tendons and aponeuroses had retained all their solidity, and the subject could be lifted up bodily.

Tuesday, April 11th, my friend Mr. Monpillard, the very distinguished and very well-known microphotographer, was kind enough to take very fine photographs of the subject, full size. It was indispensable afterwards to make the autopsy. I did this on April 13th. In order not to alter in any way the appearance of the corpse, I made the autopsy by opening the back.

Upon opening the thorax I was greatly astonished to find the viscera much contracted, but very well preserved. The lungs presented some adhesions to the pleural walls, especially

in the upper lobe. When cut open, they show a brownish parenchyma. Upon the surface and in the interior of the pulmonary tissue there exist, especially at the level of the diaphragmatic edge of the lower lobe, small white hard masses, varying in volume from a grain of canary seed to a diameter of from 3 to 4 millimetres, and having the appearance of calcified tubercles. But in view of the existence of concretions of an analogous appearance at the surface of the teguments of the lower limbs, this diagnosis can not be sustained. Besides, as will be seen in the annexed report of Professor Cornil, it is a question of a mass of tyrosin.

The heart, small, contracted, the color of dead leaves, has its valves absolutely normal and still perfectly flexible; the walls of the two ventricles measure 5 to 6 millimetres in thickness. There is no hypertrophy of the left ventricle. On the surface of the right auricle there were observed some flat concretions *sous-endocardiques* and recalling the appearance of those of the lungs.

The liver was of a yellowish brown. When cut open, it presented a tissue rather dense and compact, from which escaped the preserving liquid, with which it was deeply saturated. It was also rather contracted. The gall-bladder was healthy and contained a pale yellowish brown bile of a pasty consistency. The stomach was very small and contracted. The spleen appeared comparatively more voluminous than it ought to have been, considering the marked contraction of all the viscera. It measured from 6 to 7 centimetres upon its great axis. Its tissue appeared rather firm. The two kidneys, on the contrary, small, hard, and contracted, appeared more reduced still in volume than they should have been. The intestines were completely contracted and empty. Considering the alteration of the appearance of the head, which always results from the removal of the brain, I thought that there was no need to remove this viscus. Previous observations had, besides, shown me that the liquid on the outside could not penetrate the brain, which certainly must have been completely deteriorated.

Not wishing, out of respect to the distinguished personality of the subject, to retain the viscera, I had them carefully replaced in the thorax, after having removed several small fragments intended for microscopic examination, which Pro-

fessor Cornil, was good enough to make in person with his great ability.

I have been able to recognize very clearly on the fine microscopic preparations executed by Professor Cornil in person, and which he has been good enough to show to me, the following various peculiarities:

The heart is normal, with streaks of some muscular fibres still very clearly visible. The liver seems likewise normal, with its anatomical disposition very clear. The cells of this organ were badly preserved. It was therefore not possible to see whether there had been such cellular lesions, more or less grave, as accompany the acute liver troubles analogous to symptoms of jaundice which Paul Jones presented at the end of his life. The lungs contain in sufficiently large number these white granulations, which seem to have, under the microscope, the appearance of masses formed by a felting of fine needles of tyrosin (product of the decomposition of azotized substances). This particularly peculiar circumstance may be due to the fact (if it is admitted that the corpse had simply been immersed in alcohol) that before the alcohol could have penetrated all the viscera there took place a beginning of decomposition which brought on the production of these crystals.

The microbes are equally abundant upon the sections of the lung. They are the ordinary microbes of putrefaction, in the form of round grains and small sticks. Professor Cornil tried in vain to discover the tubercle bacilli. Besides, the only lesions that one could locate were small rounded masses, hard and at times calcified in the lungs, which correspond to small patches of broncho-pneumonia partially cicatrized. This fact agrees well with what we know of the disease of Paul Jones, who after his sojourn in Russia, coughed a great deal and to such an extent that he could not speak at the session of the National Assembly where he was received.

As to the kidneys, the sections presented the appearance, very clearly, of chronic interstitial nephritis. The vessels at several points had their walls thickened and invaded by sclerosis. A number of glomeruli were completely transformed into fibrous tissue and appeared in the form of small spheres, strongly colored by the microscopic reactions.

In a word, like my colleague Papillault, and by different means, relying solely upon the appearance of the subject, on the comparison of his head with the Houdon bust, and besides

considering that the observations made upon his viscera absolutely agree with his clinical history, I reach this very clear and well-grounded conclusion, namely, that the corpse of which we have made a study is that of Paul Jones.

J. CAPITAN,

Professor in the School of Anthropology.

Member of the Municipal Commission of Old Paris.

REPORT OF DOCTOR PAPILLAULT.

The body was laid out at full length in a leaden coffin. Some hay and straw were packed in all the interstices in such a manner as to render the corpse completely immovable in its coffin, as though it were destined to be subsequently transported a long distance. A special odor led one to suppose that the body was immersed in alcohol.

The subject was of the masculine sex. It was not clothed and bore no insignia, neither arms nor jewelry, which is easily explained if the foregoing hypothesis is admitted that the body, destined to be transported, had been carefully packed so as to render it immovable, but one could not think of dressing it and packing it afterwards with straw. It is probable that arms and clothing were to have been put on him later. A fine shirt, neatly made, constituted his sole garment. The back was closely stuck to the winding sheet with matter from the body and perhaps from substances employed in the embalming.

The hair was gathered into a cap of coarse linen. It had been combed with care, in the fashion of the times, from the forehead toward the back, curled in rolls over the ears. At the back it was brought together in one mass, slightly twisted and falling naturally. Its length was remarkable; it attained 75 to 80 centimeters.

The beard was shaven, leaving only a few days' growth.

The body was perfectly preserved. The skin was tanned: all the soft parts were mummified, but were not yet completely dried. The tissues presented a certain elasticity on being pressed. The subject was laid on its back, the head turned to the right. The nose was pressed down in its cartilaginous parts. The hands were folded across the abdomen. The feet were forcibly extended.

II. RESEARCHES TENDING TO IDENTIFY THE CORPSE.

Documents of various kinds placed at our disposal and capable of being utilized:

1. Historical documents upon the probable place of burial which General Porter followed with so much sagacity.
2. Documents concerning the disease of which John Paul Jones died and which my eminent colleague, Doctor Capitan, utilized in his researches with his well-known ability.
3. Documents concerning the physical characteristics of the Admiral and which came from two entirely different sources:
(a.) Certain details related in memoirs of the time, which Colonel Bailly-Blanchard was good enough to communicate to me; (b.) Two busts attributed to Houdon.

A. WRITTEN DOCUMENTS.

1. Jones was about 45 years of age when he died.

The features could furnish no information. The beard is strong, and appeared to belong to a man who had passed his youth. The hair, well washed, showed a few white hairs; the subject had thus evidently attained maturity. The state of his incisor teeth confirmed this approximation.

2. Jones was of dark complexion.

The hair of the subject was dark. The hair on the body was somewhat more red, as the case generally is, but belonged to a dark subject.

3. Stature was 1.70 meters.

It is probable that this is an approximate measure, and it is, besides, known that the stature varies more than a centimetre according to very diverse circumstances in the same day.

The long sickness which carried off Paul Jones undoubtedly caused settling down and diminished his stature. The bottom of his coffin not being absolutely flat, his stature on this account underwent a further slight diminution. On the other hand, his stature of 1.70 meters was surely taken standing. Now the corpse was lying, and its length increases in this position an average of 1 to 2 centimeters. Finally, the feet being forcibly extended, I had to take the distance comprised between the vertex and the inner ankle bone and add 8 centimeters, representing the rest of the stature—that is to say, the length which separates the point of the ankle bone from the sole of

the foot—according to an average of 100 corpses hitherto measured by me. Altogether I found 1.71 meters, a figure which enters absolutely into the quantities that one might expect to encounter.

To summarize: The written data and my observations made upon the body compared in a very satisfactory manner. The question in point was that of a man having attained maturity, with brown hair, with a stature of about 1.70 meters taken in a standing position and about 1.71 meters in a lying one.

B. BUSTS BY HOUDON.

These busts are two in number. One belongs to the Marquis de Biron, the other to the museum at Philadelphia. A replica of the latter exists in the Museum of Casts of the Trocadero. These two works, attributed to the great sculptor, appear to me to be of the same person. The modeling and the study given to it by the sculptor are likewise different. The Philadelphia work represents the person in the attire of an admiral. The energetic face, the authoritative, even dominating, aspect, all recall the conqueror of the English fleets, the redoubtable privateer, whose indomitable courage sufficed for everything. But above all, one feels that the artist desired to be faithful: the modeling is life-like and precise; the skin vibrates in the light; the least wrinkle is studied. It is a portrait full of life and assuredly resembling.

On the contrary, in the terra-cotta bust of the Marquis de Biron the rough sailor has become a man of the court. His hair is no longer flattened down, but is combed with care and curled in elegant rolls. Houdon attenuated the energy of his features; he diminished the robustness of the face, effaced the bumps of his forehead, and his touch, indifferent of truth, no longer made life throb beneath the infinitely varied modeling of the surface. It is a sketch full of grace and animation, but somewhat conventional. The artist wished to flatter the mania of the person who became "so elegant in his dress as to have it remarked."

We will simply make our comparisons with the Philadelphia bust, after having noted, nevertheless, that the arrangement of the hair on the corpse is exactly the same as that observed on the bust of the Marquis de Biron.

C. DESCRIPTIVE CHARACTERISTICS.

The implanting of the hair is the same. The temples are exposed by a beginning of baldness. The forehead is rather straight, the skull rounded, with pronounced frontal bumps. The superciliary arches are somewhat prominent, but the space between the eyebrows (the glabella), on the contrary, is very little so.

The cheek bones are prominent and massive.

The root of the nose does not recede behind the frontal plane, as is often the case. The bridge of the nose is rather thin, the root somewhat narrow. Seen in profile, the nose is of an undulating form on the bust. Now this form depends a great deal on the cartilage. The bony part of the nose, however, is quite compatible with it.

The prognathism of the face is feeble; that of the upper lip equally so; but the chin is so little prominent that the projection of the jaws is remarkable. The chin itself is solid, neither bifid nor pointed.

The softer parts—eyes, mouth, lobes of the nose, etc.,—are too much deformed for me to make a useful comparison. By an excess of prudence I will not even insist upon a very peculiar characteristic of the cartilage of the ear pointed out to me by Professor Georges Herve, and which seemed entirely identical on the bust and on the body. However, I will add one remark: ordinarily there exists between the face and the cranium a harmony which led me to suppose, on seeing the engraving of the bust long before any examination of the body, still in its coffin, that the head had a tendency toward brachycephaly. I had pointed this out to Doctor Capitan, and I found a cephalic index of 82.6; consequently there was moderate brachycephaly. (Various measurements were then taken by Dr. Papillault which will not be gone into).

Thus all the measurements offer an approximation really extraordinary. Two experienced anthropologists measuring a same subject would often make as great differences. Thus I could not hope to find between a bust and its model a similiar identity. I recollect having measured, some years ago, a cast of the head of Blanqui and the statue which Dalou made from this same cast. Dalou was a very precise and conscientious artist, using and even abusing, as his colleagues said, the compass. I found differences greater than those in this case.

Is it possible to admit of so extraordinary a coincidence, that of a subject, buried in the same place, having a high social position, of a stature very much the same, of nearly the same age, color of hair identical, and representing the features of the face with resemblance enough to admit of the above comparisons we have made, and presenting, finally, the same proportions of the face? If the number of subjects compared included several millions, perhaps the probability of such a coincidence might be admitted; but here it is a question of a very limited number of individuals interred in the same place. Now, of one hundred bodies taken by chance, I have found less than ten the stature of which could answer to that of John Paul Jones. With the variations of 2 centimeters there remained no more than three of a dark color. Of these, no dimensions of the face coincided. By this sole example one can figure the amount of coincidences that would have to be put together to bring about the identity of the numerous characteristics taken into consideration above.

Finally, it must be further admitted that chance, after having chosen among the thousands an individual purposely made to deceive the experts, would have had to make him die of a malady destined to deceive Dr. Capitan in his autopsy, and then, as a last stratagem, to have marked the cap which contained his hair with an initial which in one direction is a capital P with a small loop, and looked at in contrary direction a J, the loop of which is closed, both letters constituting the initials of the admiral.

Will it not appear to any impartial reader that chance would have put itself to very great trouble in bringing to the same point so many coincidences, when it was so simple to lay Admiral John Paul Jones where he should be? It is for this reason, without forgetting that doubt is the first quality of all investigators, and that the most extreme circumspection should be observed in such a matter, that I am obliged to conclude that all the observations which I have been able to make plead in favor of the following opinion: The body examined is that of Admiral John Paul Jones. Done at Paris, April 4th, 1905.

DR. G. PAPILLAULT,

Prof. at the School of Anthropology.

**GRANULAR FUNGOIDES—A SHORT RESUME OF ITS MANIFESTATIONS
WITH PRESENTATION OF A CASE.**

BY

RALPH BERNSTEIN, M.D.

Clinical Professor of Dermatology, Hahnemann Medical College, Phila.

Presented before the Philadelphia Society for Clinical Research.

GENTLEMEN of the Society—for your discussion this evening I have to present to you a rather rare and unusual case of Granuloma Fungoides, which presented itself for treatment at the skin dispensary of the Hahnemann Hospital.

Granuloma Fungoides (Mycosis Fungoides) is an uncommon affection of the skin and was first described by Alibert in 1814, there having been but about three hundred cases reported in dermatologic literature.

Granuloma Fungoides may conveniently be divided into three stages—Pre-fungoid—Infiltration—Fungoid.

We shall therefore first consider the pre-fungoid or what is well known as the pre-mycotic stage, which presents itself by the presence of lesions which resemble erythema, eczema, lichen, psoriasis, urticaria furunculosis and other inflammatory manifestations.

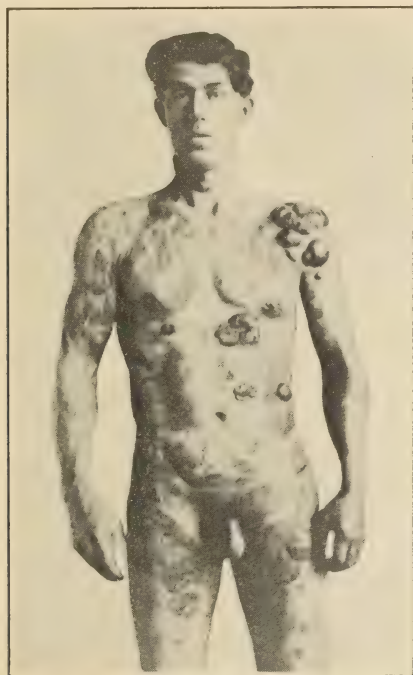
The early lesions of this disease may simulate any of the skin diseases just enumerated, the most common manifestations however, are in the form of round, well defined patches of erythema, or perhaps psoriaform plaques, with some infiltration associated with scaling and itching.

The areas affected may be of any size, and in some rare instances the coassociated redness and scaling may be widespread or even universal. The lesions at times may be moist but are usually dry, may be crusted or perhaps have coassociated papules and vesicles. The color is variable and may be of different shades of red or orange often combined with tints of purple or brown.

As the disease progresses thickening and infiltration take place, the lesions become more distinctly circinate in outline and by peripheral extension with central clearing, they may assume gyrate and fantastic outlines.

Itching is a prominent feature but may at times be absent. The course of disease is a protean one even more so than eczema. One or all of the lesions may suddenly disappear only to reappear in new or old locations after periods of days or even months. This stage with its exacerbations may last for months or even years.

Stage of Infiltration. The second stage or that of infiltra-



GRANULAR FUNGOIDES.

tion presents itself by the presence of round, sharply outlined, elevated plaques and nodules either in the location of former lesions or in entirely new areas.

The nodules are pea sized or even larger; the hardened plaques varying in size from that of a dime even to the size of the palm or even at times larger, occasionally spreading over the entire chest or back. The lesions may show no irregularities or may perhaps show verrucous elevations and fissure formation with coassociated excoriations from persistent scratching.

The pruritus as in the first stage may be very severe or may

be entirely absent. Fantastic and gyrate shaping and alternate disappearing and reappearing as in the first stage is quite characteristic.

Disappearance of the lesions may be followed by marked whitening of the skin or heavy deposits of pigment or there may remain perfectly normal epithelium. The manifestations of this stage may appear with the first stage or may appear independently, the two stages often lasting many years, only to be followed by the appearance of tumorous formations.

Fungoid Stage. The third or last stage namely that of the fungoid or tumorous period now presents itself. This stage with its characteristic tumors which appear upon the scalp, face, chest, back, or in fact on any portion of the body, may be the only manifestation of the disease.

These tumors vary in size from that of a pea to that of an orange or even larger, they may have the normal color of the skin, may be whitish or dull red in color, may be sessile or pedunculated, rounded or lobulated, and are decidedly circumscribed.

They are usually covered with a crusted or dry scaly epidermis which may be followed with ulceration. Again as in the second stage these tumors may appear on the sites of former lesions or may appear on the healthy skin.

Pain is usually present, tenderness may or may not be present. Leprosy like deformity of the face may take place when the tumors appear in this location. Glandular enlargement followed by papillary and mushroom like outgrowths follow.

Marked ulceration may take place within these tumorous formations, which may be followed by entire healing without leaving a trace of their former condition, although a slight pigmentation or a superficial scar may remain.

The patient's general health at first is unaltered; in the tumorous stage when ulceration takes place, marked exhaustion appears and the patient usually succumbs to some intercurrent disorder, usually pneumonia, tuberculosis, nephritis, or pyæmia. When ulceration is marked the misery of the patient is extreme, the coassociated odors being almost unbearable. Death may follow in a few months or may not occur for several years.

Etiology. Little is known of the causal factors responsible for Granuloma Fungoides, it is more frequently found in men than in women; especially in those who are well proportioned,

as you will note in the photograph of the case hereby presented.

The disease may begin early in life although between thirty and fifty years of age is usually the rule. There is no relation to leprosy, tuberculosis or syphilis. There is no doubt but that the disease is of an infectious nature. Some specific micro-organism no doubt is responsible, there however being no direct evidence of contagion.

Pathology. This disease has been pathologically studied by many observers, and in their reports they all materially agree. In the specimen of this case studied by the Department of Dermatology of the Hahnemann College and Hospital we found the texture of the tumors to be allied to the lymphadenomata. There was a marked proliferation of connective tissue cells about the glands and blood vessels at the base of the papillæ of the skin forming a reticular network in which round cells were imbedded. Epithelioid and giant cells were present. The tumors were scantily supplied with blood vessels which no doubt accounts for their central necrosis. Inflammatory infiltration was not marked. Mast cells were plentiful. Degeneration of collagenous and elastic fibers were noted. The rete was markedly hypertrophied, the papillary processes being elongated and broadened. Streptococci and staphylococci were found which no doubt were the results of secondary infection and bear no direct relation to the diseased state. These findings in the main agree with those of other observers.

Treatment. Apparently treatment is of no consequence, many have reported the beneficial influence of the X-Rays, although the rays were tried in this case at other institutions, they were without benefit. Injections of Salvarsan were as well tried, with the hopes that it might have an ameliorating influence upon the disease, but like other things availed nothing. Arsenic is strongly recommended by the allopathists, but seems to be no better than anything else. One case is on record which was cured after an intercurrent attack of erysipelas, which concurs with cases of epithelioma which were cured after attacks of erysipelas, cases being reported by Maddux of our own school, the essayist as well having seen a similar case. Homœopathically Phosphorous, Lachesis, Kali Brom. and Calc. carb. should be considered. Little opportunity was afforded treating this patient either Homœopathically or otherwise because of the fact that he failed to return for treatment after several visits, which was indeed regretted. An excellent

photograph however was obtained which is herewith reproduced and which in every way depicts the disease in its entirety, all three stages, being manifest.

Jarish, in *Hautkrankheiten* Wein, 1908; summarizes the various conceptions of this diseases held by various authorities as follows: Köbner, Geber, Auspitz, Weisser, Doutrelpont, Ledermann, and Hochsinger-Schiff, considering it a granuloma.

Ranvier-Gillot, Demange, Fabre, Gaillard and Amicis holding that it is an adenoid growth the expression of a diathesis "lymphadenique."

Kaposi, Funk and Siredey contending that it is a sarcoma or lymphosarcoma.

Vidal, Brocq, Leredde, and Paultauf contending that it is a disease sui generis, midway between adenomatosis and sarcomatosis.

Whereas Walther and Ullman consider it a disease sui generis, midway between granulomatosis and sarcomatosis, which opinion is gradually being accepted.

SECTARIANISM VERSUS HOMŒOPATHY.

BY

CHARLES PLATT, M.D., PHILADELPHIA.

WHAT I have to say may not be pleasing, but read it—You—and think it over seriously.

Why is it—Tell me—that today while Homœopathy is attaining to its greatest successes, both in practice and in the acknowledgments of the scientific world—Why is it that today the Homœopathic Schools and Homœopathic Societies are—but never mind! You know what I mean! The trouble evidently is not with Homœopathy; where is it, then? It must be somewhere!

Let us put our ear to the ground. What is this rumble we hear? It sounds like a protest of some kind—a low complaining growl. We can just distinguish a word or so:—"The Old School making advances to us, eh?" "Don't listen to them; they have some unworthy ulterior motive, you may be sure of that!" "They already *seem* to command all they can desire,

but, be sure of it, if they say they want to be friends they *must* be seeking to take away the little we have." This is the way it runs—finally to end in the despairing cry, "For goodness sake do not cease to persecute us—or we die!"

O no! Fearful Friends! *Homœopathy* will not die—but *Sectarianism* will—or, rather, being already dead, it will have a chance of getting decently buried, as, by the smell of it, ought to have happened long ago! This is the Twentieth Century. Wake up! Sects do not now belong—even religious sects are not the vital issues they once were—and scientific sects! Shades of Erasistratus! Yes, there used to be scientific sects—but, Now!

Am I proposing, then, to abandon Hahnemann? No, Don't be hasty. I am doing what I rather believe Hahnemann himself would do—could he. You know, but you have forgotten, that Hahnemann was a progressive man. He was a Reformer and not a Sectary. A thin, blind, world made a sect of the early homœopaths—that was their misfortune.

Hahnemann, you see, was born into a bleeding, blistering, purging world, which refused to accept him. It was content with its Old Masters, too, and wanted none of him—a School was the result. But what would Hahnemann think today of a man who sat with the books of some old author, and closed his eyes with blinkers to all that was about him—to all that was new? What would Hahnemann think? What *did* he think? He spent his life fighting just that kind of a man—begging him to take off his blinkers and to open his eyes. Today we have the phenomenon repeated—men who, in their turn, sit with their arms around a lap full of Hahnemann's books and fondly conceive that they are doing as Hahnemann would wish—that they thereby honor his memory!

I started talking about something else, you will say. I did—about Sectarianism, and now I am talking about Stick-in-the-Muds. Yes, but there is a connection between the two and you must forgive any lack of continuity. The connection is this—the Stick-in-the-Muds form the Nucleolus of Sectarianism, though it is true, too, that many of the most ardent Sectaries today hardly know one homœopathic remedy from another. These Quasi—Homœopathic Sectaries are such because of their belief that Sectarianism pays. Possibly it does—many of them would cut a poor enough figure in the face

of a broader competition. Yes, surely for them it is *safer* to do their croaking in the smaller pool.

But as regards Hahnemann, again—Do you realize that this Sectarianism is keeping him from his Just Due? His principles even, of Research, Labor, Experiment, are passing to the modern successor of his one-time antagonist. Yes, we are surely keeping Hahnemann from his due! For who can honor a Sectary? The World of Science says to us, "We recognize no School." But be sure of this!—The day will come, Sectarianism decently buried, and maybe a little quick-lime added, just to be sure, when Hahnemann will come to his own—Hypocrates, Galen, Hahnemann, Founders and Revolutionizers of Medicine—honored wherever the History of Medicine is known!

One word more—as to that Something, you know what, in reference to the Homœopathic Schools and Societies. Let us forecast that, once having wakened to the time of day, and Sectarianism having been buried, with its addition of lime, there will come a New Birth, a New Energy, and a New Success. Homœopathic Colleges, Homœopathic Societies and Homœopathic Journals will always be sought and by the best of men. The Knowledge of Homœopathy, then to be recognized as a Scientific Truth and not as the Vagary of a Sectary, will be found to be Worth While.

No, dear Confused-but-I-hope-not-Angry Reader you need not get out your handkerchief for Homœopathy. It will never need your tears! It isn't Homœopathy that is in need of your attentions—It does not even need persecution! But that ancient frog's heart of Sectarianism, while it may indeed give a few more throbs under the persecuting Saline, This you may, as realize now, is *irrevocably* dead.

MCCARRISON believes a noxious agent exists in the intestinal canal of those affected with goiter which may produce goiter. He was able to produce enlargement of the thyroid in white rats by feeding them with fecal matter from goitrous patients. Of the progeny of these rats, rats having enlargement of the thyroid only a few had symptoms of cretinism, 63 per cent. had congenital goiter, 32 per cent. had congenital disease of the parathyroid and only 33 per cent. were normal. The author believes cretinism, congenital goiter and congenital diseases of the parathyroids are induced by toxins produced in the intestinal tract of the affected mother.—*Abstr. Zentralbl. f. Gyn.* 1914—831.

Transactions of the Homoeopathic Medical Society of the State of Pennsylvania.

FIFTY-FIRST ANNUAL SESSION

MATERIA MEDICA.

BY

B. F. BOOKS, M.D., ALTOONA, PENNA.

MATERIA MEDICA is a collective term designating such medicinal substances or agents as are used in the cure of disease. The homœopathic materia medica is based upon the action of medicinal substances on the healthy human body, the knowledge of which action permits us to draw a conclusion as to their use as corrective agents. The homœopathic materia medica, therefore, is the key to the successful application of drugs in the healing of the sick. The construction of the homœopathic materia medica is a matter of great importance. A well-planned book on this subject should first present a general analysis of each drug from a physiologic standpoint in order to better prepare the student for a more detailed study of its special symptoms. Hahnemann separated the various symptoms into groups corresponding to different regions and organs of the body. This method has the advantage of making a more lasting impression upon the mind of the student and has been followed by most authors. Some authors have simplified this method by grouping into chapters all the remedies pertaining to certain organs and functions of the body.

Cowperthwaite's method appeals more strongly to me. He classifies the symptoms into four groups: First, those which occur in most of the provings; these he designates as grand characteristics. Second, those which occur less often in the provings; these he designates as characteristic. Third, those which, while important, are often found in a still smaller percentage of provers and, fourth, those which occur seldom in

the provings. Unfortunately some of our authors being over-enthusiastic in their efforts to give the student a work that could be readily assimilated, have omitted so much of importance that their writings tend to induce a neglect of our materia medica and obscure the true relations existing between the symptoms and the drug. There is a constant outcry about the impossibility of mastering our materia medica. This I attribute largely to want of earnest application. We find it not only among those who have been in the practice of medicine for many years, but it is especially prevalent among our graduates of the past decade. It is really distressing to realize the lack of interest displayed in the materia medica by many of the so-called homœopathic physicians whose offices are stacked with row after row of medicine bottles. Such physicians when called upon to treat a patient suffering with severe pain, will immediately bring forth a piston syringe containing one-quarter of a grain of morphine sulphate, dissolve in a half a dram of warm water. This they artistically inject into some part of the anatomy of the patient. Or again, take a patient suffering from general depression. The heart through no fault of its own, is perhaps working feebly. The so-called scientific doctor determines to immediately change conditions and the same syringe is brought forth loaded with 1/40th of a grain of strychnia and one-half a dram of water; or perhaps some combination tablet is dissolved in water and injected. These are forcible illustrations of a want of familiarity with the materia medica, which result in imposing upon the laity a system of treatment which certainly is not based upon the principles of homœopathy. Many homœopathic prescribers are clamoring for a repertory. The repertory if properly constructed, has its proper sphere of usefulness, but the majority of such works are loaded with misleading information and have a tendency to breed an attitude of indifference to our materia medica. Hard study is essential to successful homœopathic prescribing, and if the physician must have a repertory, my advice for him is to construct one of his own. We find some physicians who are hard students and yet cannot fully comprehend the significance of our materia medica. This, I attribute to the fact that they do not realize that the principles laid down in Hahnemann's *Organon* go hand in hand with the materia medica. The *Organon* is a guide

and expounder of the valued treasures to be found in the *materia medica*.

Personally, I realize that were I too persistent in garnering within my brain all the information contained within the various works in the homœopathic *materia medica* and therapeutics, I would soon become a permanent boarder in Dr. Klopp's hostelry at Allentown. I attribute what success I have in the practice of medicine to my thorough knowledge and familiarity with the *materia medica*.

There is a tendency on the part of many homœopathic physicians to be satisfied with possessing a smattering of the *materia medica* and many have been able to move along in an apparently satisfactory manner with very scant information, as a result of their negligence. However, some soon become indifferent to the principles of homœopathy and fly to the ready made combination tablets trusting that such combination may contain the remedy. Failing in this they are compelled to call on a brother physician who they feel is on more familiar terms with homœopathic therapeutics. This recalls an instance of my younger days which illustrates the importance of that self-reliance which is acquired only by familiarity with the *materia medica*. I had a case that gave me considerable anxiety and realized that my patient was gradually failing. I visited my old friend Dr. Dietz, and stated my case in detail. Can you imagine the advice he gave me? It came like a thunder bolt from a clear sky, "Young man, dig for it." Realizing the importance of this advice, I returned to my office and drew from the shelves my works on *materia medica* and began to study. As a result, I found the remedy my patient needed and I immediately went to his home and administered one dose, leaving another to be given after a stated interval. Returning to his bedside in a few hours, I found the tide had turned and the patient was improved. I again called upon Dr. Dietz and from the fullness of my heart thanked him for his advice. He placed his hand on my shoulder, his countenance beaming with pleasure and said, "I cannot expect to be here many years. Had I given you the advice you expected, you would continue to depend on me as long as I am here. It was an opportunity for me to give you a lesson on the importance of self-reliance and I am pleased with the result." Self-reliance, all earnest homœopathic physicians realize, is maintained by making the *materia medica* our inti-

mate companion, as this associate is essential to successful homœopathic prescribing.

There is no excuse for even the busy practitioner of Homœopathy to neglect the study of homœopathic therapeutics. As, in nine cases out of ten, he will find himself slipping away from the principles of his own school or mixing them up with those foreign to homœopathy.

To those of you who have taken up special lines of work, and in the mechanics of which you have become proficient perhaps at the expense of a practical working knowledge of your materia medica, we would ask you to devote some of your leisure hours to familiarizing yourself with the physiological drug action of those remedies, the general action of which are upon those organs of the body to which your specialty is confined. If you will do so, and apply them as the opportunity presents, we will assure you that they will deprive you of many opportunities of exploiting your proficiency in mechanics.

IN a paper on "The Indications for the Removal of Tonsils and Adenoids," read before the Philadelphia Pediatric Society, Dr. F. R. Packard pointed out that the indications for removal of the tonsils differ from the indications for removal of adenoid growths in the naso-pharynx. He said that Myer's original article describing naso-pharyngeal adenoid growths, practically covered all the indications for their removal.

In regard to removing the tonsils, formerly hypertrophy was regarded as the sole indication, but at present their role as portals of infection has led to more operations being indicated on that account than for any other single indication. He referred briefly to the infections which follow disease of the faucial tonsils. There are practically no contra-indications to removal of the tonsils, aside from the dangers attached to the operative procedure employed. The laryngologist should only remove them when there are good grounds for supposing them to be the cause of some pathological condition. This can only be told by examination of the individual case. Sometimes very large tonsils are the source of but little trouble and merely ocular inspection of the throat is not sufficient upon which to base judgment in regard to their removal.

ECZEMATOID RING-WORM.—Hartzell has found the ointment suggested by Whitfield, which contains 3 per cent. of salicylic acid with 5 per cent. of benzoic acid, most effective; but, he says, it cannot be used, as Whitfield has pointed out, without some degree of caution in markedly inflammatory cases, as it occasionally produces considerable irritation.—*Journal of A. M. A.*, Feb. 13, 1915.

INTESTINAL STASIS WITH LANTERN SLIDE DEMONSTRATION OF THE ROENTGENOGRAPHIC FINDINGS.

BY

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INTESTINAL stasis is a chronic disease, due to a too long retention of intestinal contents and an absorption of poisonous substances therefrom which, in turn, results in many and various ailments, which at times become so severe as to cause death.

The types of intestinal stasis may be classified as gastric, iliac and colonic.

In the gastric type there is very little absorption of the poisons, but fermentation results which inhibits the action of the secreting glands and therefore indigestion is a frequent occurrence. Emptying defects of the stomach may also result.

In the iliac type we have a most prolific cause of autointoxication. As is well known, in the ileum we have the absorption taking place more than in any other part of the intestinal tract. Stasis occurring here and the resulting absorption of the putrefactive poisons takes them directly into the system.

Under iliac stasis, we also classify stasis which may occur in the jejunum. The most important portion of the ileum affected is the terminal ileum, or that portion near the ileo-caecal valve.

Stasis of the colon is more common than that of the small bowel, whilst this condition in itself I do not feel to be as frequent a cause of auto-intoxication because of the small amount of absorption in this area. However, we must admit that a stasis in the colon will also produce auto-intoxication in a marked degree when there is a defect of the ileo-caecal valve. This defect may be an insufficiency of the valve, allowing a regurgitation of the fecal contents on leaving the caecum and ascending colon. When the reversed peristaltic waves occur and the rhythmical churning and squeezing to separate the fluids from the solids, the faulty working of the valve the contents are forced back into the ileum where absorption is more active. The colon

bacillus dominating the fecal contents in the caecum and ascending colon is allowed to regurgitate with the fecal stream into the ileum, putrefaction is set up by the bacillus, poisons formed, and absorption into the blood takes place.

Again, stasis of the colon itself may be one of the causes of

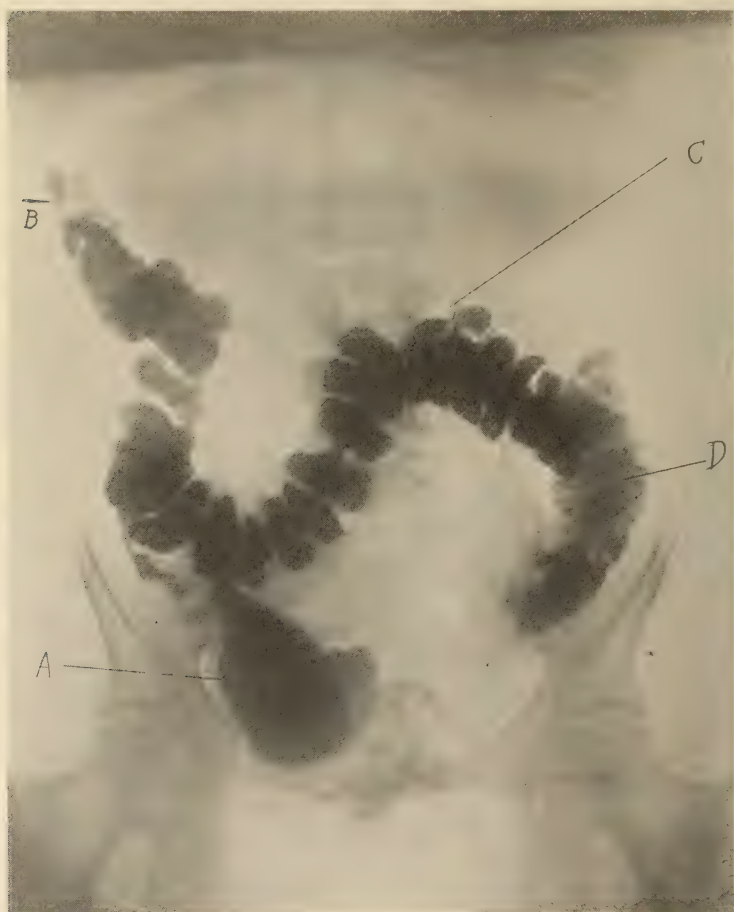


FIG. NO. 1.

Twenty-four hours after bismuth meal. A. Pouch in colon. B. Splenic flexure. C. Transverse colon. D. Cecum.

auto-intoxication even though there be no regurgitation. This may be due to the fact that we have kinks or loops—bands which become so thick and heavy as to constrict the lumen of the gut—adhesions formed in the mesentery and preventing the normal flow of the intestinal stream—atony so that we have a

loss of peristalsis—dilatation and especially the dilatation in Hirschbaum's diseases—colonic diverticulitis.

The causative factors in the production of intestinal stasis are very numerous and I shall only mention a few of the more prominent ones. In order to fully understand this condition



FIG. NO. 2.

Same case as figure No. 1, colon injection. A. Pouch. B. Splenic flexure. C. Transverse colon. D. Cecum. E. Rectum. F. Sigmoid.

and the etiological factors going to produce the same, we must look back on the early history and evolution of man. In the prehistoric times when man walked on all fours, the mesentery being attached to the spine, hung in folds. Within these folds the intestines were placed similar to a broken arm in a sling.

When man took the upright position, the intestines were dropped toward the pelvis and, in certain individuals, where there was a certain amount of weakness, these folds were not sufficiently strong to retain the intestines in their normal position and ptosis would result. This condition of course is increased when the individual partakes of heavy or bulky food producing a strain on the mesentery.

Sex as an etiological factor is very prominent. We find this condition most prominent in the female sex. This may be due to hereditary weakness, manner of dress, child bearing, etc. Faulty habits—carelessness in answering the calls of nature—possibly, mock modesty will cause this condition, especially in school children, very frequently due to the fact that the teacher will not permit the child to go when the call was felt. It is well known that if calls of nature are not answered at once, the desire will pass away and nature rebels. Congenital defects again will cause the same condition.

We recognize two distinct types in the female sex of ptosis, (ptosis being one of the accompanying symptoms of stasis) the virginal and maternal. In the virginal type, we do not have such lax abdominal walls as we find in the maternal type. We are not so apt to have the protruding lower abdomen, but we have frequently the position assumed by the patient similar to that of the maternal type. Relaxation of abdominal walls, protruding of the abdomen, defective perineum or pelvic floor will frequently cause this condition. Intestinal stasis may be caused by many other things, but these are sufficient to lead us to look for this condition.

Should I attempt to describe in detail the symptoms due to intestinal stasis, it would require more time than that allotted to me for this paper. I therefore shall only mention the more prominent ones.

The superficial signs referable to the skin are, the greasy, pasty, unhealthy looking skin, presence of acne (especially in young girls) and menstrual difficulties. Abdominal pains are present and at times assume a very severe character. Depression, both mental and physical—loss of energy, the patient becomes morose and life seems a burden. The appetite is usually poor or variable, accompanied by attacks of nausea, sometimes vomiting, bad taste in mouth, foul tongue and breath. Headache is one of the more prominent conditions, and very difficult to relieve unless the cause can be ascertained and overcome.

Backache, pains in the arms and legs—joint pains—poor circulation, as shown by cold hands and feet—foul odor to the perspiration—constipation—do not be misled by the patient's statement that his bowels move daily, as this does not rule out stasis, for I have found patients who made this statement and cor-

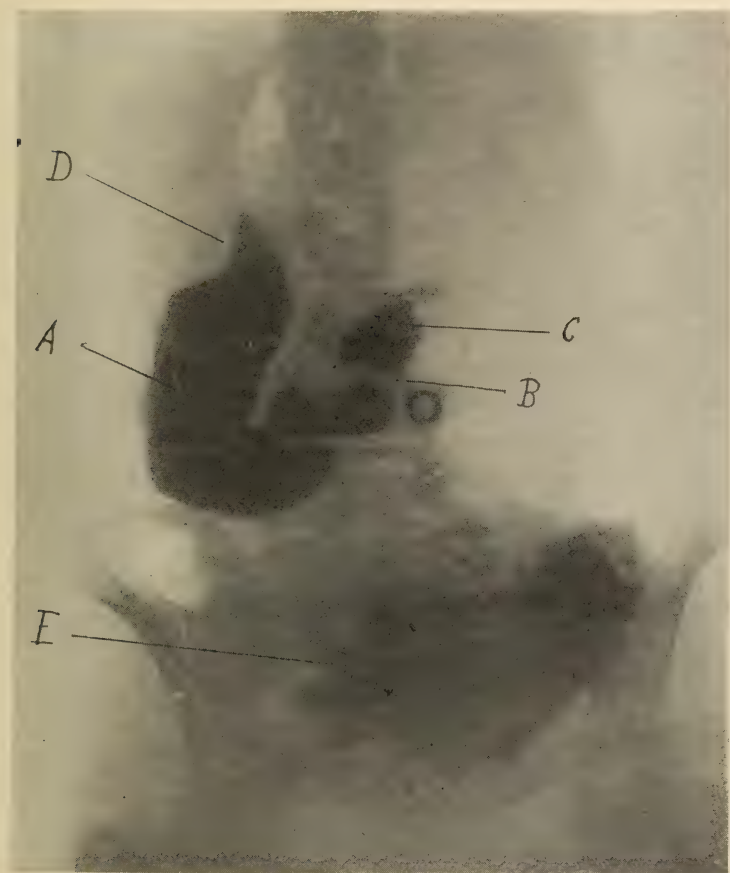


FIG. No. 3.

Six hour plate showing bismuth retained in stomach at A. B. Pyloric sphincter. C. Cap. D. Splenic notch. E. Bismuth in the terminal ileum showing stasis.

rectly so, but in whom, upon investigation, I found that food would remain for from seven to ten days regardless of daily evacuation—intestinal and gastric flatulency—tenderness over the abdomen, especially over the right iliac fossa. In the breasts we find changes taking place such as a chronic mastitis

and in advanced cases with cystic degeneration, in which condition a transition to cancer may occur. Changes in other glands may be produced, such as in the pancreas, thymus and thyroid glands. Gall bladder infection, which is only the first stage in the formation of gall stones. Arterio-sclerosis is admittedly a



FIG. No. 4.

Twelve hours after bismuth meal showing at A. residue in the stomach. B. Bismuth meal in the terminal ileum none having passed into the colon.

disease due to auto-intoxication and the many pathological changes that accompany this condition—nephritis, myocardial degeneration and, according to Dr. Alfred C. Jordan, Guy's Hospital, London, England, Graves's disease is traceable to in-

testinal stasis as being the etiological factor. Dr. William Seaman Bainbridge, of New York, made the statement before the American Roentgen Ray Society at Cleveland, Ohio, September 11, 1914, that the cause of many cases of epilepsy could be traced to intestinal stasis and cited the case of a young man, who had been having daily attacks, and at times several a day covering a period of several years in which the condition was treated surgically with entire relief of the attacks covering a period to date of six months. If we find epilepsy as a result of intestinal stasis, is it not conceivable that the next step may be insanity? These are only a few of the most prominent conditions that we may find, many other changes frequently being traceable to intestinal stasis. With this array of conditions confronting us as caused by intestinal stasis, does it not behoove us to look more diligently into all cases presenting these symptoms and ascertain if the etiology may not be intestinal stasis?

All of us can make the simple tests for intestinal stasis with very little trouble. The indican test of the urine and the test meal being the tests most commonly used. For the test meal I have the patient partake of some food that will pass through the bowels and be recognizable in the feces, being sure he or she has not had any of this same food for at least ten days previous. The test meal as employed, is usually of green corn (when procurable) some of the grains of which remain in the feces and can be recognized—ripe tomatoes, in which the skin will give us the clue to when it is passed from the bowel—berries, raisins and grapes, in which the seeds will be the indicating element. Allow the patient to take his regular meals following the test meal, minus, of course, the material used to make the test. This in a general way will furnish data as to the presence or absence of intestinal stasis, but does not give the cause or location of the lesion producing it. For this purpose the Roentgen ray is our sheet anchor. By making use of the opaque meal, which is usually bismuth, sub-carbonate or barium sulphate in two glasses of buttermilk or fermented milk and following it through the intestinal tract, we are able to locate the area affected. In some few cases it is necessary to resort to the colon injection in conjunction with the opaque meal. The idea in using the bismuth or barium meal is to place within the hollow organs some material that is opaque to the Roentgen ray, as otherwise the ray would pass through these organs without

casting a shadow. However, when the rays are absorbed by the opaque meal, it outlines on the photographic plate these organs and any defect in filling kinks, displacements or dilatations will be easily recognized.

I can possibly better illustrate this point by making use of the projecting lantern showing some of the conditions found.

*** VALEDICTORY ADDRESS.**

BY

ADOLPH LIPPE, M.D.

Professor of Materia Medica.

Delivered at the Eighteenth Annual Commencement of the Homœopathic Medical College of Pennsylvania, March 1, 1866.

LADIES AND GENTLEMEN :

You have assembled here to witness a public act. The PRESIDENT of the Homœopathic Medical College of Pennsylvania will grant the degree of Doctor of Medicine, and especially of Homœopathic Medicine, to the candidates presenting themselves for that purpose to-day.

And the FACULTY of the Homœopathic Medical College have charged me with the honorable duty of giving their congratulant farewell Address, to the gentlemen whom they have had the pleasure of instructing,—who have complied with the conditions prescribed by our charter, and who are now to become members of the Medical Profession.

Conferring the degree of Doctor of Medicine, and especially of Homœopathic Medicine, upon these gentlemen, is a public act of which you will be the witnesses. And in this public act you will also be participators. For these degrees are granted, only by authority derived from the people of whom you are a part; this authority having been conferred by charter upon

* This address which first appeared in the *Hahnemannian Monthly*, March 8, 1866, is republished at the request of one of our subscribers. It presents in an able manner the situation of the homœopathic school fifty years ago and contains much that should be read with interest and profit by every homœopathic physician and especially by our recent graduates.—Ed.

this corporation by the people, through their representatives in the Legislature of the State, assembled on the 19th day of February, 1865.

One hundred years before this charter was obtained, one similar, and the first medical charter in the United States, was granted to the University of Pennsylvania, an institution still in existence. In subsequent years, the increasing population of the country, and the consequent increasing demand for more physicians, have led to the granting of other charters, and to the establishment of other and similar institutions, in this and in other States.

All the charters of the Medical Colleges in the United States were granted by the people, and had for their original object the promotion of instruction in the Healing Art, *for the best good of the people themselves*. Neither the charters the colleges, nor the corporations were for the Medical Profession. But colleges and corporations, institutions of professional learning, and all the professional members themselves, were alike of and from and for the people!

Thus the diplomas conferring the degree of Doctor of Medicine were not to be regarded as badges of rank above the people,—not as the titular designation of a privileged class,—not as the *star and garter* marks of a professional nobility; but merely as proofs that their holders had complied with the requisite conditions of instruction. These diplomas were simply intended as certificates that their possessors were endowed with the requisite knowledge of Medicine; and that they had acquired this knowledge under the teachings of the Faculty thus testifying to their qualifications.

They were intended to serve the people as safeguards against ignorant and therefore unsafe practitioners of Medicine. Thus the Medical Colleges were founded and endowed with the power of conferring degrees, *by the people for their own good*. And the diplomas themselves were not so much the badges of a privileged order, as they were way-marks to guide the people to those whom they might trust.

The practice of Medicine was not formerly, and is not even now, an exact Science. It was and must ever remain an Art. It is indeed based upon natural laws; but the practical application of these laws to the cure of disease is necessarily more or less imperfect. So that while in the healing art great improvements have been made in the past, and in our own day,

there will ever remain room for still further improvements in the future.

Samuel Hahnemann made known to the world the fact that *immutable natural laws could be applied to the cure of diseases*,—that these had always existed, although unknown or disregarded. And he laid down practical rules for rightly applying these laws. But no sooner had he announced his grand discovery in the *Science of Medicine*, and proposed and practically illustrated his wonderful improvements in the *healing art*, than a most malignant and vindictive storm of opposition was raised against him in the Medical Schools of his day.

That such should have been the case in monarchical Europe, where the voice of the people was of no avail, would not surprise us, still less will it surprise posterity. For such a course was in exact accordance with the aristocratical spirit of the political and professional institutions of those countries. For even the professional schools were political institutions. And they were all controlled for the chief good, not of the people, but of the privileged classes. Thus the people were not consulted as to what should be taught in the Medical Schools; and were compelled to submit to medical authority and medical treatment, not of their own choosing. And in many instances they could as little escape employing and submitting to the parish doctor, as they could subsequently escape being buried by the parish priest.

These Medical Schools being thus in no way responsible to the people, and deriving no authority from them, could only follow the example of the arbitrary authorities from which they derived at the same time their organizations and their support. And this example was as *intensely conservative* in professional treatment and principles, as it was *aristocratical* in its personal tendencies. Thus the Medical Schools of these monarchical countries were naturally as much opposed to progress in Medical Science and to improvements in the healing art, as their kindred political institutions were opposed to the extension of knowledge and of freedom among the people. Hence they refused to change their course of instruction,—excluded Homœopathy from their halls of learning, and persecuted and punished those who practiced upon its principles and dispensed its medicines.

In more modern days a change has taken place in this respect. Now the necessity of teaching our progressive heal-

ing art has become apparent: since many of the higher nobility, and even no small number of crowned heads have made themselves known as its adherents. In Austria and in Spain the authorities have opened the Medical Schools to us, and appointed professors for the purpose of teaching Homœopathy; and we may now look forward in the confident expectation of seeing, at no distant day, the study of Homœopathy, made one of the indispensable requisites of candidates for the degree of Doctor of Medicine in all the Universities on the Continent of Europe.

In England the Allopathists appealed to the people at a general election, and attempted to prevent the return of two gentlemen as Members of Parliament, because they were Homœopathists. But the result of the election showed that the people did not consider Homœopathy a sufficient ground for exclusion from public office. No longer ago than the year 1865, Captain Grosvenor, for Westminster, and Colonel Hughes, for Lambeth, were bitterly objected to, and their constituents informed that they were unfit to represent them, *because they were Homœopathists!* The organs of this allopathic opposition were the *Lancet* and *British Medical Journal*, aided by *Punch*, the mouthpiece of the aristocratical school in Medicine.

But this opposition was severely rebuked, and this allopathic appeal to the people was decidedly rejected, since both these gentlemen, accused of Homœopathy, were returned to Parliament by handsome majorities. The great offence which roused the wrath of the *Lancet* after the election of Captain Grosvenor, was that Lord Grosvenor, his father, from his place in the House of Commons, had called for the Reports of the Homœopathic Practitioners and Hospitals; these reports having been withheld by the committee appointed to ascertain the results of the various modes of treating the cholera which prevailed in 1854.

In reply to this call from Captain Grosvenor, the Medical Council returned the following resolution: "Resolved, That by introducing the returns of Homœopathic practitioners they would not only compromise the value and utility of the averages of cure, as deduced from the operation of known remedies, but they would give an unjustifiable sanction to an empirical practice, alike opposed to the progress of Science and the maintenance of truth." The reports so unjustifiably

withheld were published in a second Parliamentary paper. By these reports, which the allopathic officials had shown themselves so unwilling to have made known to the people, it was shown that the mortality under the allopathic treatment of cholera was 36 per cent.; and that at the same time the mortality under Homœopathic treatment of cholera was but 16 per cent. And let it be borne in mind that these reports could not be denied, since they had been all verified by the Allopathic Medical Inspectors. Is it to be supposed that the allopathic officials would have opposed the publication of these reports had they favored Allopathy instead of Homœopathy? Would they not have paraded them everywhere in triumph?

Thus it happened that the Medical Council, with the President of the College of Physicians at their head, could no longer hide their ignorance of Homœopathic treatment; and could no longer pretend ignorance of its greater comparative success. Nor could they any longer withhold from the people the statistics which would enable the people themselves to institute a comparison between the two modes of Medical treatment. Nor could they any longer escape the charge of having, in the interest of Allopathy, betrayed the trust reposed in them by the people. No longer could they deny having attempted to sacrifice the interests of the people at large, to promote the aggrandizement and maintain the dominant and domineering position of their aristocratical Medical Class. They could escape none of these consequences of the unexpected failure of their nefarious attempt to withhold most important public information from the public. But ten years later we find them incapable of learning a lesson of wisdom from their former folly, and still more foolishly attempting to persuade the people to reject the son, because the father was instrumental in exposing their own selfish betrayal of the trust reposed in them by the people themselves. But they succeeded in this case as badly as in the other. And in view of the failure of their original attempt at fraudulent suppression of the truth (fraudulent because based on false pretences), and in view of the signal failure of their recent attempt to punish those who exposed their first, it is highly probable that these high and aristocratical Medical officials are now employing themselves in seriously considering *whether honesty is not the best policy!*

In the United States, where the authority to teach, and to grant the degree of Doctor of Medicine, comes solely from

the people, and has been conferred upon the corporations by the people for their own good, the opposition to Homœopathy has been still more determined. Feeling that their craft was in danger, and conscious that they had no actual and final support, except in public opinion, the Faculties of the different Allopathic Medical Schools have undertaken to crush Homœopathy. They have aimed at nothing less than to prevent it from becoming known to the people by experience. And by ridiculing its theory and at the same time excluding its practical development, they hoped to be able to prevent it from supplanting the old methods of medical treatment in the confidence of the community.

These corporations have not only refused to teach Homœopathy themselves, but they have attempted to proscribe it altogether. They have again and again refused to grant the degree of Doctor of Medicine to candidates known to possess a knowledge of Homœopathy or who were deemed likely to embrace this system, however well qualified to practice medicine they might prove in all other respects. And some of these Medical Corporations even now assume to grant the degree of Doctor of Medicine only with the proviso that the candidate shall pledge himself never to practice Homœopathy, and that his degree shall be declared null and void in case he breaks such pledges.

The people of the United States had a right to expect that the Medical Schools, which received from them all the authority to teach Medicine which they possess, would willingly accept an improved system of Medical treatment, or, at the very least, refrain from violently opposing it. But the event has failed to justify such reasonable expectations. And since these chartered corporations have thus allowed themselves to forget that all their authority came from the people, and was conferred only that *it might be used for the popular good*, the people themselves have been compelled to interfere; and they have been obliged to pursue such a course as would best indicate the folly of these bigoted corporations, in supposing that their arbitrary and interested conduct could hinder the improvement or retard the progress of the healing art.

Medicine was to be practiced for the benefit of the people; and not maintained as an exclusive monopoly for the advantage of a particular class. Thus the people had a right, and they availed themselves of that right, to inquire into the real

merits of a Medical System so arbitrarily and so unceremoniously rejected by those in whom they had hitherto trusted, and upon whom they had, in times past, conferred such important privileges.

Under such circumstances, this dictatorial conduct of the Medical Schools, in refusing to graduate well qualified candidates, *because* they were Homœopathists, could not but meet with a most decided rebuke from the people. This rebuke was therefore as well deserved and just as it was severe. And to render it more practically effectual, the people have granted to the followers of Hahnemann the same rights and privileges which they had previously conferred upon the earlier Medical Schools.

Hence the Homœopathic Medical College of Pennsylvania acts under the same authority, equal in amount and originating from the self-same source, with that vested in the other Medical Corporations. And the Degree of Doctor of Medicine here conferred is as truly valid as that of any other Medical College in the country. And in addition to the knowledge of the Science and Art of Medicine in general, which our diploma certifies to as amply as any other, it proves that its holder possesses also a competent knowledge of the principles and practice of Homœopathic Medicine.

Since Medicine is to be taught and practiced principally for the benefit of the people, it becomes the interest, right and duty of each individual citizen to inquire into the comparative merits of the various Medical Systems, and to choose between them for himself. And in this most important respect we differ from those of the Old School, who contend for what they consider the exclusive privileges and vested rights of an established craft, and who hold that the people have no right to inquire into the mysteries of Medical Science; that they themselves have all the right to command in the premises, and that the people have only the right to obey,—the sole privilege of implicit, unquestioning submission.

Such a course as this, one so entirely inspired by purely aristocratical principles, however appropriate it might appear in a Monarchy, is out of place in a Republic, and insulting to its citizens; as if they did not know their rights, or knowing, did not dare maintain them.

The Homœopathists on the contrary, both teachers and practitioners, appeal to the people and invite investigation.

We contend that in the civil Republic, as well as in the Republic of Letters and Sciences, every person has equal rights and privileges. And that it is as much the duty as it is the interest of each one to seek for himself the truth in Medicine, as in Politics. The Allopathic School fears investigation; we solicit it. They wish to dictate to the people, to control them in their choice of Medical treatment; and wherever they have the power, they throw all possible legal hindrances in the way of all others than themselves, striving with all their might to compel the people to come to them as the only authorized practitioners of the healing art. We desire the people not to be thus controlled, but, in the utmost freedom and in the fullest light of intelligence, to choose their Medical treatment for themselves. We desire them to hear and examine for themselves, knowing that ever after they will all the more firmly hold fast to that which they find good.

Revolutions never go back! And the Allopathic School will never be able to stay the progress of Medical improvement and reform. With the wish as father to the thought, they have again and again predicted the decline and fall of Homœopathy. But unfortunately for them, Homœopathy not only still declines to fall, but goes on extending in influence and increasing in strength. In the New World, it grows with the growth and strengthens with the strength of freedom and intelligence. Were we inclined to act the prophetic part, we might as easily, and with far more reason, announce the decline and fall of Allopathy! But it is foreign from our wish to bandy such sinistral compliments! But this much we do most unhesitatingly say, that the measure of vitality which the Allopathic system manifests at this day is in no small degree due to its real though unacknowledged compliance with the principles of the Homœopathic School, and its adoption of the Homœopathic medicines and mode of treatment. In fact, had not the Allopathic School yielded in a great degree to the medical reform inaugurated by *Hahnemann*, the Prince of Medical Reformers, it would long ere this have been swept away by the whirlwind of public opinion. Thirty years ago bleeding and salivation, calomel and the lancet, were the acknowledged sheet-anchors of the allopathic ship of state. Now few of her professors are bold enough to advocate their cause in public! While in the quantity of drugs administered, the change made in allopathic practice, in yielding to the irresist-

tible influence of medical reform, is no less remarkable. Formerly the largest possible doses were given; and the more heroic the treatment, to use their own term, the more highly it was commended, irrespective of its results. Now the fashion is all the other way; and you will hear the friends of allopathic physicians extolling them, *as claiming to give very little medicine!*

Hitherto the influence of Homœopathy on the Allopathic system,—which is so palpable to the people, and which in reality is all that has preserved the old system from utter contempt,—has been entirely unacknowledged on the part of the allopathic professors themselves. But in the nature of things this cannot always continue. The time is coming when the Allopathic Schools will be compelled to teach, as accepted truth, the great therapeutic principles which Hahnemann announced to the world, and for which he was persecuted, literally compelled to flee from city to city. And even as in Leipsic, the city from which he was driven in disgrace as a medical reformer, they have now erected a splendid monument to his memory, so in the allopathic colleges, in which his name and principles have been a byword and a reproach for years, they shall yet be held up to the admiration and acceptance of future generations of Medical students. Revolutions never go back; and as in the past the Allopathic Schools have been obliged to modify their practice in accordance with the great change in public sentiment which resulted from the influence of Homœopathic success in healing the sick, so will they eventually be compelled to adopt the principles upon which all that success is founded.

GENTLEMEN OF THE GRADUATING CLASS:—You present yourselves here to-day, to receive in public the Degree of Doctor of Medicine, and especially of Homœopathic Medicine. The Degree conferred upon you to-day endows you with certain rights and privileges; and with these you assume also some corresponding obligations.

The Faculty who have had the pleasure of instructing you, and who have testified that you have acquired the knowledge requisite to enable you to enter upon the practice of medicine, are no less solicitous for your future welfare, than they have been to guide you aright while preparing yourselves for the responsible position you are about to assume. And the remembrance of the many pleasant hours your teachers have spent

with you, will be rendered more and more grateful, year by year, as they learn of your success in the noble profession you have chosen.

You are now about to enter upon the active practice of Medicine; to become working members of the Medical Profession. And your Degree confers upon you all the civil rights and privileges which legally pertain to the Doctor of Medicine. The laws of the land now authorize you to ask for a license to practice Medicine; to testify as Physicians, in questions of medical jurisprudence before the courts; to give certificates requiring the signature of a Doctor of Medicine; and to perform all other acts which are necessary to be done by a medical man. You are legally as eligible to all offices held by medical men, as are the graduates of any other medical colleges chartered by the people, through their Legislatures.

These civil and legal rights have not always been accorded to the graduates of this or any other Homœopathic Medical Colleges, or to the Physicians who have become Homœopaths. In the Army and Navy of the United States, the professed Homœopathician has been refused examination; and the Allopathic practitioners have manifestly shown themselves afraid to admit the members of the Homœopathic School as competitors in healing the sick. The temper and disposition of the physician of the Old School, holding public offices by appointment, has been bitter, vindictive and unjust. Homœopathicians have been by them persistently refused examination for employment in the public service. And where any such have been discovered among the Physicians and Surgeons of the Army and Navy, they have been dismissed as soon as possible, on one pretence or another. But the Allopathic officials have done far more than trample upon the individual rights of the Homœopathic portion of the profession, in thus denying them the privilege of serving their country with their best abilities, in her hour of sorest need. The enormity of the tyranny exercised upon free-born American citizens, by men clothed with a little brief authority, can scarcely be believed! But it is none the less true, that they prohibited the voluntary citizen soldier from choosing the kind of medical treatment in which he had most confidence. Nay, more than this; these arbitrary medical tyrants showed in the Army and Navy, where in time of war they had exclusive sway, just what they would do in the whole country at large in time of peace, if they had but

the power. They *compelled the sick and suffering soldier to submit to such* medical treatment, in innumerable cases, as he utterly abhorred, and such as he knew would prove permanently ruinous to his health, if it did not actually destroy his life. If the citizen soldier, who had voluntarily taken his life in his hand to serve his country, declined to swallow the massive doses of calomel and quinine which were ordered for him, such conduct was considered a grave act of military insubordination! little less than a crime! In point of fatality, the wounds received on the battle-field from minnie rifles, and cannon and bursting shells, the casualties of the "imminent deadly breach," and exploding mines, were as nothing compared to the ravages of Camp Fever and Typhus. But I think I am far within bounds when I solemnly affirm my conviction that these and other diseases incident to the soldier's life, were rendered four-fold more fatal by the relentless system of dosing and drugging with which they were treated in the camps and hospitals. What chance had the poor, exhausted soldier, worn out with forced marches, debilitated still more by loss of sleep, and his whole system diseased by unhealthy food, what earthly chance had he to survive a system of drug medication, or rather drug poisoning, which would have brought a well man to death's door? Not the ghost of a chance; as witness the unnamed hillocks which, through the far South, mark the last resting place of tens of thousands of "the unreturning brave" who never saw a battle! And for all these things shall the enlightened people of this country hold those who have been guilty of them to a strict account. The reaction from such tyranny, in the population of a country so vast as this, can scarcely be expected to develop itself at once. But it will none the less truly come; and it will be most severely felt.

Upon what pretext the graduates of a Homœopathic College have thus been set aside, we know not. Much less upon what pretence, those possessing the required qualifications of medical officers, and holding commissions as such, have been prevented from doing what they thought best for those under their professional charge. But this much we do know, that the entire community, the people at large, have been grossly insulted by the arbitrary conduct and unjust regulations of those intrusted with the management of the Medical Department. In this free country, where the Constitution especially

guards against mental oppression, and where religious liberty is a fundamental principle, we have been compelled to see a class of men undertake to dictate in the most arbitrary manner how the sick and wounded should be treated. As if the citizen soldier had no personal rights, which medical men were bound to respect. This must not be permitted to occur again. Freedom of choice in medical treatment must be made as sacred, as inalienable a right to every citizen, whether soldier or not, as is his liberty to worship God according to the dictates of his conscience.

It is for you and for all of us to resent such flagrant insults, which are aimed not against the poor soldier alone, but against the whole body of the people, of whom the soldier is still a member. For the same principle involved belongs to the whole as well as to the part; and this oppressive treatment of the few under their control, but too plainly indicates what such men would do with the many, with the whole people, had they but the power in their hands.

It is for you and for all of us to appeal to the people; and by all just and legal means to correct these evils, and prevent such illegal unconstitutional assumption of authority in future.

The people, who authorize this corporation to confer upon you the rights and privileges pertaining to the degree you here receive, will most surely see to it that you enjoy these rights and privileges without molestation. And if any of the public servants of the people, forgetful of their duty, abuse the power entrusted to them, to set aside the decrees of the people, and trample upon your rights, you will have your legal remedy. And you must take care to use it; for this matter is not confined to the public service of the United States. The rank and file of the allopathic forces have followed the bad example set them by their leaders in the Army and Navy and in the corporate Medical Schools of the country. Even the State and County Medical Societies pretend to ignore our degrees, thus arrogantly setting themselves up above the people, and undertaking in the most insolent manner to refuse compliance with the laws of the land. By so doing they ignore not alone the right of Homœopathic physicians to practice Medicine; but they no less certainly attempt to ignore the right of the people to employ these physicians. Nay, more than this, ignoring the already existing charters of Ho-

homœopathic Medical Colleges, they seek to dictate to the people and tell them they shall grant no charters to Medical Schools save their own. This is the tendency of the entire Allopathic School; and if its members have not fully succeeded in all this, it has not been from want of will or of effort on their part.

But this domineering, oppressive and despotic conduct is carried much farther, and rendered still more odious, when these Medical Societies, in combination with their parent Allopathic Schools, undertake to ignore their own Medical Degrees, when their holder becomes a Homœopathist. Such injustice and oppression is as gross as it is unparalleled. For these Medical Schools assume that persons whom they have instructed, whom they have publicly declared to possess the knowledge and qualifications requisite for the practice of Medicine, and upon whom they have accordingly conferred their degrees, become dispossessed of the requisite knowledge and unqualified to practice medicine, as soon as they prove themselves intelligent enough to appreciate and manly enough to acknowledge an improved and progressive system of medical treatment. And the individual members of the Medical Societies attempt to carry out these decrees of their Autocratic Collegiate Chiefs. And both parties, in thus joining hands in this iniquitous contract, are engaged in an attempt to destroy the rights of individuals and of communities. An attempt which, as it is instigated by the supposed interests of the few, and directed against the public and inalienable rights of the many, deserves to be held up to public contempt, as a crime against Liberty! Let me not be misunderstood in this connection. We are not complaining. When we numbered but three hundred Homœopathic physicians, we asked no favors: still less do we ask them now, when we number from four to five thousand. If our Homœopathic practitioners desired to go into the Army and Navy of their country, it was from no motives of personal interest; but they were anxious to sacrifice personal comfort and pecuniary interests, in order at once to serve their country and the great interests of our common humanity, by rescuing our poor soldiers as far as possible from an insidious internal foe of drug poisoning, more dangerous and fatal than the common enemy without and the still more common disease within the camp. Such was their avowed object. And because the allopathic authorities of the Medical Department both knew this, and feared lest the Homœopathists

might prove successful in exposing the notorious abuses and destructive methods of the *regular treatment*, they conspired together to exclude them from the public service.

It is not the Homœopathic system which is asking favors. The regular Allopathic system did not and does not now dare to allow a fair, open competition. It is not we who are making complaint in this matter. If we have appealed to Cæsar, it is for Cæsar's sake. We appeal to the people, in the interests of the people themselves. The time has long gone by when, if ever, we could have asked favors, even for humanity's sake; now we would not accept even offered favors. But conscious of our strength, and of the justice of our cause, of the cause of the people, in fact, we demand equal rights, everywhere and in all respects, and that a thousand times more for the sake of the people whose agents and servants we are, than for our own sake.

And the corporate Colleges and Medical Societies which have thus conspired together against the rights of the people will be held by the people themselves to a strict account.

And it is for you and for all of us so to employ our superior mode of treatment in practical illustration of the great principles of Homœopathy, as to prove to the people that we are truly public benefactors. It is for you and for all of us so to use the rights and principles conferred upon us by the people, as at the same time to honor their confidence in us, and command their respect and their acknowledgment that we appreciate the free institutions of this Republic more correctly than do its representatives of the Allopathic School. Whatever course the opponents of our progressive system may pursue, your legal rights are secured.

From the very nature of the Allopathic system, from the exclusive aristocratical spirit which has always animated it, you must expect just such opposition in the future as we have ever experienced in the past. This should but stimulate you to put forth the more strenuous efforts to make yourselves preëminently successful in your private practice. This should but serve to fill you with the stronger determination to prove yourselves public benefactors. It is thus you will most surely render futile all allopathic opposition. It is thus that you will enable the people to *believe in Homœopathy with reason*, as they see, in your constantly increasing success in healing the sick, a *constantly increasing reason for their belief*.

I have given you an insight into the animus of the allopathic opposition to Homœopathy. But such motives as I have portrayed, could not of course be openly avowed, even were they consciously recognized. Nor would I attribute any such unworthy motive as fear to any class of persons, had they not manifestly shown fear—fear of submitting their system to open, fair competition. None are so blind as those who will not see; and if the allopathic professors honestly believe their system to be more successful in treating disease than ours, why have they shown themselves so constantly and so bitterly opposed to fair competition? Unwilling then to give the true reason which animates their opposition—unable to satisfy the people that our System is not far more successful in healing the sick and in saving life than theirs, they try to turn public attention from the substantial merits of the question. And since they cannot put down Homœopathy by argument, and by the results of experience, they attempt to give it a bad name! Homœopathy, they say, is *ridiculous*! For all their elaborate reasoning and profound mathematical calculations, stripped of their customary verbiage, amount to this, and nothing more!

When a new discovery in the arts, or a new development in science appears, which we do not understand, it is indeed very easy to call it ridiculous. But what does this amount to? what in fact does it indicate, beyond the ignorance of those who employ such terms, and their unwillingness or inability to learn?

The Indian, who for the first time saw the telegraph wire, listened with incredulity to his white brother's explanation of its use; and even when shown in the office the working of the machine, exclaimed, "Ridiculous! impossible!" But he accepted an invitation to test the merits of this mysterious apparatus. He sent a message to the chief of his tribe, then on a visit to the Great Father at Washington, and received an answer in a short time. Then he believed; although he could not understand the natural laws which are connected with the Telegraphic System. Would that the Allopathic Professors could be induced to learn a lesson of candor from the son of the forest—and give Homœopathy a fair, practical trial. Then we should hear no more ridicule. For then, like the Indian, they would be compelled to believe in the reality

of the system, even if they did not fully understand the principles on which it was founded.

Gentlemen—By the acceptance of the Degree you receive to-day, you incur certain obligations, on the fulfilment of which depends your future welfare and success in life. In addition to the common Degree of Doctor of Medicine, you receive and accept also the Degree of Doctor of Homœopathic Medicine. If your instructors have fulfilled their duty and honored the confidence reposed in them by the corporators of the college, you have been taught all the branches of Medical Science in general, and also Homœopathy in addition to these. And if from the recommendation of your instructors, you now receive the Degree of Doctor of Homœopathic Medicine from the agents of the people, the people themselves will have a right to expect that you will give them sound Homœopathic treatment. Your individual success will be the best if not the only test of the faithfulness of your teachers and of the correctness of their instructions. The reputation of this college will depend upon your skill and personal success in applying in practice the precepts and principles which you have learned within its halls. For, in truth, Homœopathy is eminently a practical system, nor could its principles be deemed reliable if they could not be confirmed in actual practice.

You are about to become members of a liberal Profession, to enter the Republic of Scientific Medicine. Here you will find true liberty. But liberty is not license, or disregard of law or order. The highest freedom is consistent with, is inseparable from, the highest order or the most perfect obedience to law. As Homœopaths, you become endowed with certain liberties, and you must consequently be governed by some corresponding laws. The violation of any of these laws or fundamental principles, is license, violation of order, abuse of liberty.

In accepting the Degree of Doctor of Homœopathic Medicine, you at the same time accept certain fundamental principles, radical doctrines, or laws of medical order. These principles have been taught you with an unvarying unanimity, by each and every member of the Faculty. Never before has the Faculty of a Medical School more uniformly inculcated the same doctrine in medicine. Nor could such harmonious agreement have been possible in these essential principles of

Medical Science, had they not been confirmed by much practical experience during a long course of years.

As Homœopathicians, we are agreed that in the selection of the curative remedy for the sick, we must be governed by the *law of the similars*—and that we can acquire a sound knowledge of the action of Medicines, only by the study of their provings upon those in health. We are also agreed that the similar remedy must be given *singly, by itself*. And finally, we are agreed that the similar and single remedy must be given in the *minimum dose*. That is, in the smallest dose which may be sufficient to effect the cure in the individual case. And as Homœopathicians, we are not at liberty to violate either of these three fundamental principles. In fact the violation of either one involves the rejection of all; for they constitute an essential trine, an inseparable unit.

Upon the banner under which you now enter the contest, you see inscribed: The Law of the Similars; The Single Remedy; and the Minimum Dose. This was the banner unfurled by Hahnemann. Under this banner his disciples have gained unparalleled success. And this same banner, if you but follow it faithfully, will most assuredly lead you to victory over disease, and to triumph over your opponents,

That the fundamental principles inscribed upon this banner have not been acknowledged by all men, must not surprise you. Other great truths, similarly based upon natural laws, have been promulgated, which have not yet been generally accepted. As a people who have chosen a Republican form of Government, we are in a minority among the nations of the earth. But has not our national experience been that of success unparalleled in the history of the world? Has not our Republican form of Government manifestly produced the greatest amount of prosperity and happiness to the many? Has it not shown itself capable of repelling foes from without and of subduing those from within? Have not the free citizens, the children of the Republic, proved themselves amply competent to maintain its institutions and confirm its stability, through the darkest and most trying seasons? Why then is not this great, fundamental principle everywhere acknowledged? Simply because there are royal families and privileged classes, whose claims are paramount to those of the people. These are the ruling orders; and so long and so far as they have the power, they will combine to prevent the

adoption of the principles of the government in the nations, so in the Medical world the Allopaths have been the ruling class and just so long and just so far as they have the power, will they conspire to prevent the introduction of improvements and progressive medical principles. Just so long and just so far as they have the power, have they shown themselves opposed to that perfect freedom of choice by the people, which would follow a fair and honorable competition of the old medical system with the new. As the Republican principles of free government are not adopted in many of the nations, because it is the interest of a small but powerful minority of the people that they should not be—so the most beneficent discoveries and fundamental principles of Medical Science are not generally accepted, because it is the interest of a small but influential minority of the people, that they should be rejected and denied.

And even within our own ranks, there are those who fail to realize the fundamental importance of the three great principles which are inscribed upon our banner. Honest sustainers, enthusiastic admirers of Homœopathy as many of this class are, their support of the new system is too often inspired by zeal without knowledge. From the very earnestness of their desire to conciliate, to please all parties and so make Homœopathy popular, they are sometimes led to the fatal step of compromising its principles. Homœopathy is nothing, if not founded upon the necessary, fundamental principles of our nature.

Within the grand old historical building, near where we are to-day, the Revolutionary bell sounded forth the glorious news of the Declaration of Independence, based upon the Natural and Divine Law, *all men are created free and equal*. But even in this free, intelligent, Christian nation, it has taken almost an entire century to realize the full import of this great principle. There was a tacit compromise; and in the Constitution of these United States were sown the seeds of life and death, of freedom and of slavery. The tares and the wheat grew up together till the season of harvest. And we have seen the Angel of Death marshal his myriad forces on either side—forces which, through long years of blood and agony, have gathered and gleaned that awful harvest!

Let us then beware how we tamper with the essential, the fundamental, natural principles on which Homœopathy is

founded. To compromise on these principles, is to undermine the very foundations of the system; and to replace them with elements whose internal development will most assuredly prove far more destructive than all the assaults of foes without. Let us be patient;—in upholding our standard;—in faithful adherence to the legends emblazoned upon its folds. Let us be true to the laws of Nature, and the God of Nature will be true to us.

As the great Republic, we address ourselves to the nations of the world,—neither pressing our superior institutions upon their attention, nor yet allowing them to dictate to us,—but simply holding up for their inspection the successful results which follow the adoption of the natural and fundamental principle of Self-government. So, as Homœopathists, we neither demand attention, ask for favor, nor yet will we allow our rights and the rights of the people whom we represent to be infringed. In the Republic of Medicine we are at once the opponents of exclusive privileges, the upholders of freedom, and the representatives of the people. We but appeal to the people through our works; and ask them to judge of the merits of our system by the simple standard of the beneficent results which it secures to them.

As a Republic, we shall finally see our example followed by the other nations; see them consign the shackles of the slaves, the crowns of the tyrants and the badges of the privileged classes to the museum of antiquities, there to keep company with the silver shrines of Ephesus and the mummies of Egypt!

And as Homœopathists, as the representatives of the Republican principle in the medical world, we shall finally see added to these antiquarian curiosities, the emetics and cathartics, the diuretics and tonics, the iron pills and the blister plaster, the lancet and the cupping glasses, which were the follies and the bane of former generations. And we shall see the people themselves, enlightened by the followers of Hahnemann, emancipated from their medical tyrants and oppressors, and rejoicing in the beneficent results of their newly chosen system.

GENTLEMEN: in order that you may well and bravely accomplish your part in this glorious work, see to it that you are not allured by the decaying grandeur of the Old School, or misled by short-sighted or pretending friends of Homœo-

pathy to degrade our noble system, by attempting to render it acceptable to the opponents of liberty and progress. See to it that you do not undermine the cause you seek to serve, by subjecting it to fatal compromise of its fundamental principles!

Such are the duties you assume to-day: duties which you owe to the honor of the profession of which you now become members; and duties which you owe also to the people, by whose agents you are honored as physicians. And just in proportion as you faithfully discharge these duties, will the people still further honor and confirm the acts of their agents here to-day. And while thus becoming, in the interests of humanity, the beneficent, practical defenders of the School which represents Republicanism in Medicine, you will be none the less devoted to the welfare and prosperity of this great Republic itself. May you ever prove watchful and zealous in the use of all proper means to preserve the glorious institutions of this Land of Liberty. May you ever be found ready to meet and disarm the enemies of our common country.

The first sentence in the "Organon of the Healing Art," is: "The first and sole duty of the Physician is to heal the sick." And upon the full understanding and appreciation of this single sentence depend the further understanding and correct application of principles as important, as little understood and as liable to be misrepresented, as were the principles involved in that first sentence of the Bill of Rights, "all men are created free and equal." Seek then to preserve unstained the Hahnemannian standard of Homœopathy; as this nation has proudly redeemed the glory of its flag. Support then the one as you do the other, with faithful adherence to the principles which each represents. Emblems of political as of medical liberty, they mutually strengthen each other. For where all the institutions are free, undisturbed by privileged classes, there will a free government best succeed; and where the government is free, there true medical liberty and progress will most surely flourish.

And as you will not allow a single star to be plucked from your national flag,—so neither will you permit either of the legends emblazoned upon your medical standard to be obscured or effaced. But as you strive to add new stars to the national galaxy, so will you also seek to render these fundamental principles more universal in their adoption, and more glorious

in their application. And as you prove faithful to these great principles, so will you prosper in your newly acquired profession. And as you are thus faithful and prosperous, so will you become benefactors of the people, whose trusts you accept and whose honors you bear.

And now, in my own name and in the name of my colleagues, let me bid you,—as faithful followers of the illustrious founder of Homœopathy,—an affectionate farewell.

UNION OF AN ALMOST COMPLETELY AMPUTATED HAND.—Schloessmann reports the case of a boy, age 10 years, whose right hand was almost completely amputated by a machine, leaving a pedicle barely 3 cm. wide at the ulnar margin, containing the ulnar nerve and artery and the tendon of the flexor carpi ulnaris. The tendon of the extensor carpi ulnaris was cut only half way across. Under anaesthesia the periosteum and the divided tendons, twenty-two in all, were sutured, and the two ends of the median nerve united. The radial nerve remained divided. The radial artery did not have to be sewed, as on freeing its distal end blood was seen to come out with every heart beat, showing that the blood supply from the ulnar through the volar arch was sufficient. The skin was closed without drainage and the wound healed without reaction. On the eleventh day the splint was removed and motion begun. At the end of six months the boy was again admitted to the hospital, for removal of his appendix. The position of the hand was normal. The thumb and index finger were livid, owing to impaired circulation. Dorsal flexion was decreased one-half, volar flexion one-fourth. The hand could be used to eat, drink and write, and he could take up and hold large and small objects which were not too heavy. The muscles of the right arm and forearm showed lack of development.—*Clinical Journal, London.*

PELVIC ABSCESS.—Schlaghecken reports fifty cases of pelvic abscess and discusses the treatment. His conclusions are that vaginal drainage through the pouch of Douglas is the method of choice and is mostly sufficient to bring about a rapid and certain cure. If larger gonorrheal adnexal tumors exist with scanty purulent exudate, laparotomy with vaginal drainage is indicated. With more abundant exudate and large gonorrheal adnexal tumors, operation in two stages should be considered; first incision of the abscess through the posterior vaginal vault and after healing of the same treatment of the adnexal tumor by means of laparotomy.—*Abstr. Zentralbl. f. Gyn. 1914—1416.*

EDITORIAL

SOME PHASES OF THE AFTER TREATMENT OF ABDOMINAL OPERATIONS.

THE up-to-date surgeon has come to realize the immense importance of the after care of operative cases as a factor in determining the character of the ultimate result. It is a well known fact that with modern methods of anæsthesia, hemostasis and asepsis, the mortality rate of cases that actually die on the operating table is very small indeed, the vast majority of fatalities following operations occurring anywhere from forty-eight hours to several weeks after the operation.

The first post-operative complication to be met as a rule is shock, and it is generally conceded that the amount of shock can be very much diminished by keeping the patient warm during the period of operation, by avoiding undue manipulation of important organs and by curtailing the length of the operation as much as is consistent with good work.

Vomiting following abdominal operations is distressing and at times dangerous to the patient. It has been found that lavage of the stomach through the tube before removing the patient from the operating table will frequently prevent vomiting of a severe character. Albert Carless, Surgeon to the Kings' Hospital, London, relies largely upon turpentine enemata to relieve this symptom, especially when distention of the abdomen is associated with the vomiting.

In regard to feeding after abdominal operations, there has been a great change in the opinion of surgeons in recent years. Formerly patients were starved for nearly a week, while the present custom among our leading surgeons is, where there has been no interference with the continuity of the bowel, to restore the normal activities of the intestinal canal as soon as possible and, therefore, feeding is begun as soon as post-operative vomiting is under control. The distressing thirst which was formerly so dreaded by patients undergoing abdominal operations has also been largely eliminated by the early administration of water by mouth and by the use of saline solution by

rectum according to the Murphy method. In fact the Murphy treatment by saline enteroclysis has done much to rid abdominal operations not only of their uncomfortable but also of their fatal results.

Sufficient attention has not been given in the past to the pulmonary and cardiac complications following operative procedures. We believe that post-operative mortality would be considerably lowered by a routine examination of the heart and lungs prior to operation. It is not infrequent to see pneumonia and tuberculosis develop in an active form shortly after the administration of an anæsthetic and, in a large majority of these cases the conditions which were conducive to such complications were present at the time the anæsthetic was administered. Many operators fail to realize the irritating effect of an anæsthetic upon a latent tuberculous process; but medical men who are called upon to care for such cases often find that the process was hastened into activity by the injudicious administration of an anæsthetic. G. H. W.

THE AMERICAN INSTITUTE OF HOMŒOPATHY.

QUITE naturally the interest of homœopathic physicians throughout the country is centered in the coming meeting of the American Institute of Homœopathy to be held in Chicago, June 28th to July 3d. The place of the meeting will be the Hotel Sherman, corner of Clark and Randolph Streets, one of the largest and most up-to-date hostleries in Chicago. The rates for rooms with bath vary from two to five dollars per day.

The local committee has made arrangements so that the space for exhibits and for the meetings of all the bureaux and affiliated societies will be held under the same roof. We are advised from those in charge that, from both a scientific and social standpoint, the meeting promises to be a most interesting one. The local committee has planned some social entertainment for each evening including the usual banquet, and a steamboat ride on Lake Michigan, and a social entertainment along dramatic lines.

The press committee is very desirous of securing duplicate copies of papers for publicity work and these should be sent

to Dr. Parsons as soon as possible. This is a matter of considerable importance as the influence of homœopathy with the public depends largely upon the reports that are given out through the medium of the newspapers. Last year considerably over a thousand columns of newspaper publicity was secured through the efforts of the press committee, and homœopathy was brought to the attention of many people who had heard little or nothing about it in previous years. There will be a strong effort made at this session to limit the time of the papers to twenty minutes and the time for committee reports to fifteen minutes. The officers of the bureaux and sections have been very lax in enforcing this rule in the past, and it is to be hoped that long-drawn out papers and reports will be discouraged as much as possible. It is very difficult for even an interesting talker to hold the attention of an audience to listen attentively to a poor speaker for half that length of time. Many persons are deterred from attending certain sessions when they see on the program the names of certain writers, whom they know from past experience will probably, like the brook, go on forever unless interrupted. It would certainly add to the interest and value of the session from every standpoint, if papers were short and to the point and discussions likewise kept within the limit that the By-Laws of the Institute call for.

In conjunction with the Institute meeting, members should bear in mind the special train for the Pacific Coast, which leaves Chicago on July 3d, and arrives at San Francisco on July 11th. The particulars of this trip can be secured from Dr. T. E. Costain, Heyworth Building, Chicago, Ill.

G. H. W.

GLEANINGS

RECENT BIOLOGICAL INVESTIGATIONS ON THE DIAGNOSIS OF MALIGNANT GROWTHS.—Some important researches by Dr. G. Mioni in cases of carcinoma and sarcoma have recently been published in the May-June number of *Tumori*. The haemolytic reaction carried out by Crile's methods was positive in 62 per cent of individuals suffering from neoplasms; negative in 32 per cent. While, however, the former consisted for the most part of operable visceral tumours, many in an early stage, the latter were either cutaneous cancers or those in an advanced condition where the diagnosis was clinically evident. These results were, therefore, all the more appreciable in that they furnished an element of diagnosis in cases clinically doubtful. Considering the fact that the reaction was often positive in suppurative conditions, in acute febrile diseases, and cases of surgical tuberculosis which were also investigated in the same manner, it must be admitted that this detracts in some degree from the practical value which might be attributed to the reaction. Elsberg's reaction gave 11.2 per cent. of positive results, as many in the cases investigated as in controls. This cannot be looked upon as satisfactory from a practical point of view. Estimation of the antitryptic index gave high values in 91.4 per cent. of the cases. This fact is important since the presence of a high index in a patient in whom the question of an acute infective or suppurative focus could be eliminated would lend support to the diagnosis of malignant disease, especially where the symptoms pointed to such a possibility. This reaction is simple, and extremely easy and practicable. Methods of biological investigation based on immunity reactions furnished uncertain results. The specificity of the antigen is far from being demonstrated, as our knowledge of the etiology of malignant growths is uncertain. It cannot be denied that in the serum of patients suffering from neoplasms there are substances capable of provoking specific reactions (deviation of complement) when in contact with extracts of tumors, substances that are not to be found in the serum of healthy persons or those suffering from other diseases; but at the same time it must be recognized that nearly similar reactions take place also with non-specific antigens, and this largely detracts from their significance. The method of passive anaphylaxis gave the author absolutely negative results when the second injection was endoperitoneal; positive in 33.3 per cent. of the cases when the second injection was subdural; but also the controls showed phenomena of irritation and lowering of temperature in an almost equal percentage. It seems doubtful, therefore, whether the anaphylactic picture can be attributed to a true reaction between antigen and antibody, but it is more probably due to a mechanical or toxic action caused by the solution of antigen coming in contact with the nervous centers.

The deviation of the complement was complete in 23.2 per cent. of individuals who had growths, incomplete in 14.7 per cent., negative in 14.1 per cent., and doubtful in 17.6 per cent. In the controls it was negative in 62.5 per cent., incomplete in 28.3 per cent., and doubtful in 16.6 per cent. The reaction was inconstant according to the antigen employed; it might confirm other reactions, but taken alone the results were unsatisfactory. The meiostagmic reaction was considered positive when the difference was 1 to 5; thus, with non-specific antigen it was positive in 57.1 per cent. of the cases. Considering, however, the difficulty of producing active antigens and the ease with which these lose their efficacy, it will be difficult for any investigations to take a prominent position in clinical practice. After the total extirpation of the neoplasms a progressive diminution ending in complete disappearance of isohaemolysins containing in the serum of the patients was observed and at the same time a diminution of the antitryptic index until it reached normal values. This fact demonstrates that the isohameolysins as well as the antitryptic ferments are in direct relation to the presence of the neoplastic mass and are the indication of the altered metabolism of the organism when a prey to malignant disease.—*The London Lancet*.

THE TREATMENT OF DIPHTHERIA BACILLUS CARRIERS WITH BOUILLON CULTURES OF STAPHYLOCOCCUS PYOGENES AUREUS.—J. D. Rolleston describes (*British Journal of Children's Diseases*, July, 1913) 10 chronic diphtheria bacillus carriers who were treated by spraying and swabbing the throat and nose with bouillon culture of staphylococcus pyogenes aureus. In six faucial cases the findings were negative within two to seven days after starting the treatment. In the two nasal cases no result was obtained. The method should not be employed except late during convalescence. A mild form of sore throat was produced within a few days, and there was considerable malaise; the symptoms were of short duration. The culture is easily prepared and no injections are required, so that the method has advantages over the endotoxin treatment. The histories of the cases are described. There was a death in an infant of three months who had been admitted with nasal diphtheria and congenital syphilis. In this case the terminal bronchopneumonia developed nearly three weeks after the use of the spray.—*The Universal Medical Record*.

CONVALESCENCE.—After a long and serious illness the functional activity of the digestive tract is always depressed and as a consequence, during convalescence no line of treatment is more urgently required or more positive in its benefits than measures capable of promoting the physiologic efficiency of the digestive organs. Tonics are more or less serviceable, but inasmuch as the profession have in seng a true digestive secernent, this remedy is the one generally turned to by physicians who are familiar with its exceptional therapeutic value. Under its systematic use the secretory glands of the stomach are gradually restored to their normal activity, and as this takes place, the nutrition of the whole body naturally shows a corresponding improvement. Since convalescence and a return to perfect health are always largely dependent on the restoration of the nutritional equilibrium, it can readily be seen how useful seng is following an acute

illness. Certainly no medical man who has ever tried this effective remedy in the treatment of some weak debilitated patient and observed the response which the digestive functions make to its tonic influence, will deny to similar patients the benefits he knows it will give.

The investigations of Metchnikoff and Schmidt, together with the later studies of Lane, Jordan and many others have lain such emphasis on the evils resulting from intestinal stasis that it is at last recognized that no small proportion of the diseases afflicting the human family are directly attributable to faulty elimination of the intestinal accumulations in the lower bowel. For a long time, to be sure, the evils of chronic constipation have been realized, but it is doubtful if, until Lane began to speak of the large intestine as the "cesspool of the human body," the dangers of intestinal putrefaction were fully appreciated.

It is hardly probable that Lane's radical treatment of "short circuiting" the bowel—the removal of three to eight feet of intestine—will ever be popular and simpler measures will unquestionably hold a definite place in the management of intestinal stasis for some time to come.

Many and various are the remedies that have been employed with more or less success, but among recent remedies brought forward for accomplishing intestinal elimination, and, what is often of even greater importance, the removal of certain local intestinal conditions contributory to, or the result of the bowel stasis, prunoids unquestionably stands first. This unique combination of phenolphthalein and other carefully selected drugs has been found an evacuant of exceptional value. Its effect is prompt and certain, with none of the iniquities of the commonly used laxatives and cathartics. Prunoids do not gripe nor occasion the slightest discomfort, although they produce very copious movements. Most important of all, however, is the physiologic effect on the intestinal glands and muscular tissue that follows their systematic use. Unlike most cathartics, the reactionary effect never tends to increase the constipation. One effective dose is often followed by regular movements for several successive days, and used routinely, in the absence of organic causes, gradual diminution and at last complete cessation of the remedy is always possible; in other words, a more or less permanent correction of the constipation is an almost invariable result.

SOME PRACTICAL APHORISMS ON PULMONARY TUBERCULOSIS.—Albert C. Geyser, M.D., New York. Nearly every man, woman and child is or has been infected with the bacillus tuberculosis before reaching his twelfth year.

Ninety-five per cent of all these patients recover without treatment or in spite of treatment and are now tuberculized.

The tubercle bacilli may remain latent in the host during a lifetime.

Patients may lose their acquired immunity and become reinfected or a latent process may start up *de novo*.

Without anaemic area the tubercle bacillus will not thrive and multiply.

Unless the bacilli do thrive and multiply tuberculosis cannot develop.

Children recover from their first tuberculous infection as they do from measles and scarlet fever.

Prevent reinfection or the lighting up of a latent focus by preventing anemia.

Diathermia applied to the pulmonary region will absolutely overcome anemia for the time being.

Lung gymnastics will continue and make permanent the temporary gain of diathermia.

The normal blood contains all the elements necessary for a cure; proper use of hydrotherapy will increase the red and the white corpuscles.

Vegetable proteids, cream and fat insure proper metabolism.

Regulated physical exercises cause auto-sero-therapy in the patient.

Pure outdoor air is grateful to the lungs and the patient forms the habit of proper breathing.

Bad, foul or vitiated air is shunned by the lungs and trains the patient to breathe as shallow as possible; his efforts are in the path of least resistance.

Forced feeding and the administration of drugs in this disease is, to say the least unphysiologic, therefore of questionable value.

The main fault with the average patient is that he seeks medical advice rather late; the fault with many a physician is that he tries to cure his patient with high pressure speed.

The road to success is not paved with golden blocks nor strewn with roses.

Creosote, vaccines, serums, tuberculins and forced feeding ought to be relegated to the past, while physiologic therapeutics ought to take their place.

Practically every case of tuberculosis is curable if treated on the above outlined aphorisms.—*Medical Times*.

SCOPOLAMINE-MORPHINE IN LABOR.—The *Lancet-Clinic* of October 24, 1914, contains an article by Tate on this subject. Summing up the whole question as it now stands, the writer believes:

1. That the profession at large will never adopt this treatment, because it is complicated, requires too much time, and is dangerous if not used properly.

2. That it will receive from American obstetricians, who have the opportunities and facilities, a fair and impartial trial.

3. That with proper cases, ideal surroundings, and the case in the hands of a competent obstetrician, many women may be carried through their confinement with little pain, whether they use this treatment or resort to our usual remedies as now employed.

4. That condemnation should not be too strong on the part of the inexperienced and incredulous at the present time.

5. That with the writer's limited number of cases, not treated strictly according to the method laid down by the Freiburg clinic, he is not wholly discouraged, but intends to further study this treatment, and when proper cases present themselves, to try it according to his understanding of its administration, and later on he will be in a position to either condemn or approve with at least satisfaction to himself.

AVERAGE AGE AT DEATH.—The average age at death for both sexes in 1913, from all causes combined, was 39.8; for males alone, 39.2; for females alone, 40.6. The corresponding averages for 1912 were 40.6, 39.9 and 41.4. The report cautions the reader not to confuse the average age at death with expectation of life as given in life tables.

Nearly 18 per cent of all deaths were of infants under one year of age, and more than 25 per cent were of children under five years. After the first five years of age deaths are most frequent among persons between 70 and 74, inclusive. This applies to both sexes combined and to women alone, the deaths among these groups forming 6.56 per cent and 6.88 per cent, respectively, of the corresponding totals. For men alone, however, the period of greatest mortality is between the ages of 65 and 69, inclusive, the deaths during this period constituting 6.4 per cent of the total for males.

THE TREATMENT OF HEART INVOLVEMENT IN SYPHILIS.—Brooks, in the *Journal of the American Medical Association* of October 24, 1914, reaches these conclusions:

1. Cases of heart involvement in early syphilis may be fully cured irrespective of the character of the lesion by vigorous specific treatment alone and independent of circulatory measures.
2. Even well-established and late cases usually respond to treatment with cure, or marked though perhaps temporary benefit.
3. In most tertiary instances, purely circulatory measures produce but slight benefit unless preceded by or combined with specific medication.
4. Interrupted or inefficient treatment establishes an immunity or resistance on the part of the lesions against the specific drugs employed. Hence the importance of vigorous and careful systematized treatment.
5. The most satisfactory treatment is one which combines the use of salvarsan with mercury and the iodides. Combined treatment may be unnecessary in early cases, but it is essential in late ones.
6. Salvarsan, preferably old salvarsan, produces in most instances the quicker results. It is capable, however, of inducing serious symptoms, and in untried cases of heart involvement it should be administered in small doses until its action has been ascertained, particularly in those lesions characterized by disturbances of rhythm.
7. Mercury alone may produce apparent cure. Best effects are secured with this drug when its form is from time to time changed. Its use appears to be indispensable in all well-established cases.
8. The iodides are valuable adjuvants in the treatment of these cases, especially in their late stages, but they are apparently without specific action.
9. Permanent injury to the heart must be assumed to have taken place in late cases, even though prompt response to treatment and apparent cure occurs.
10. Successful treatment rests primarily on the recognition of the cause of the disease and on its specific treatment.

VACCINE THERAPY IN EYE DISEASES OF BACTERIAL ORIGIN.—Medalia.

in the *Boston Medical and Surgical Journal* of October 22, 1914, says he thinks the following conclusions are warranted:

1. The use of vaccine in bacterial infections of the eye, if judiciously carried out, will yield results such as could not be obtained with any other method of treatment heretofore known.

2. Autogenous vaccine should be used as soon as possible.

3. In order to obtain good results optically as well, the vaccine treatment should be employed before permanent damage to the eye occurs.

4. When used in infections of the anterior chamber, especially in hypopyon ulcers, repeated paracentesis, if performed alongside of the vaccine treatment, will yield better results than when vaccine is used alone.

5. Small and oft-repeated doses will do away with marked negative phases and minimize the chance of a possible setback, both of which might occur if too big a dose is employed.

6. Vaccine if used in a prophylactic way is of value in connection with preoperative immunization. It is of special value in cataract operations where the conjunctiva contains bacteria that cannot be gotten rid of in the ordinary way.

7. The bacteriological examination in connection with prophylactic immunization of all cases prior to cataract operations seems to the writer to be the logical method of procedure and will do away, to a great extent, with running the risk of postoperative infections.

FORMALIN IN UTERINE HEMORRHAGE.—Gerstenberg has used formalin in uterine hemorrhage since 1900, and still recommends its use in climacteric and metroric hemorrhage. He regards it as superior to zinc chloride. If two applications are not effective in women between 40 and 50 years of age, some other serious condition is present, probably myoma. The treatment has also been used in chronic gonorrhoeal and other chronic catarrhal conditions of the cervix, although with less success. The treatment is carried out by introducing a securely wrapped sound saturated with formalin into the uterine cavity, and repeating the procedure by using a second sound after subsidence of the uterine contraction induced by the first introduction.—*Zentralbl. f. Gyn.*, 1914—1203.

THEODORE J. GRAMM, M.D.

EPITHELIOMA OF THE LIDS.—The author has been able to study eighty-eight cases of epithelioma primary in the lids and the canthi, or involving them from the skin in the immediate vicinity. These cases were taken from the Mayo clinic at Rochester, Minnesota; all belonging to the basal celled or what is commonly known as rodent ulcer. These patients were treated chiefly in three ways: By radial excision, excision with actual cautery of the wound, or simply actual cautery. Purely cutaneous growths, if small, were cauterized. Plastic repair of the tissue was done when necessary. Of the thirty-three involving the lids and canthi, seventeen per cent. recurred at some time. These recurrences were all on the site of the previous growths and not in glands. When, however, the growth had penetrated the orbit, the percentage of recurrences rose rapidly—eight out of eleven. The majority of cases which recurred at all did so in three or four months. The author considers that operative measures are in general the

safest means of treatment, especially when the growth is rapid and adherence to periosteum or involvement of the orbit has taken place. In slow growths, and when the patient can be kept under observation, "there seems to be no good reason why radium should not be used." The Roentgen ray cannot be regarded as a dependable agent in the treatment of epithelioma, however useful it may be as a palliative or postoperative measure. The importance of early and radical operation is well emphasized in the statistic data given. Unless the growth is so clearly circumscribed that complete removal without sacrificing the eye is certain, a complete exenteration of the orbit followed by cautery is imperative.—*Dr. Carl Fisher, Journal A. M. A.*

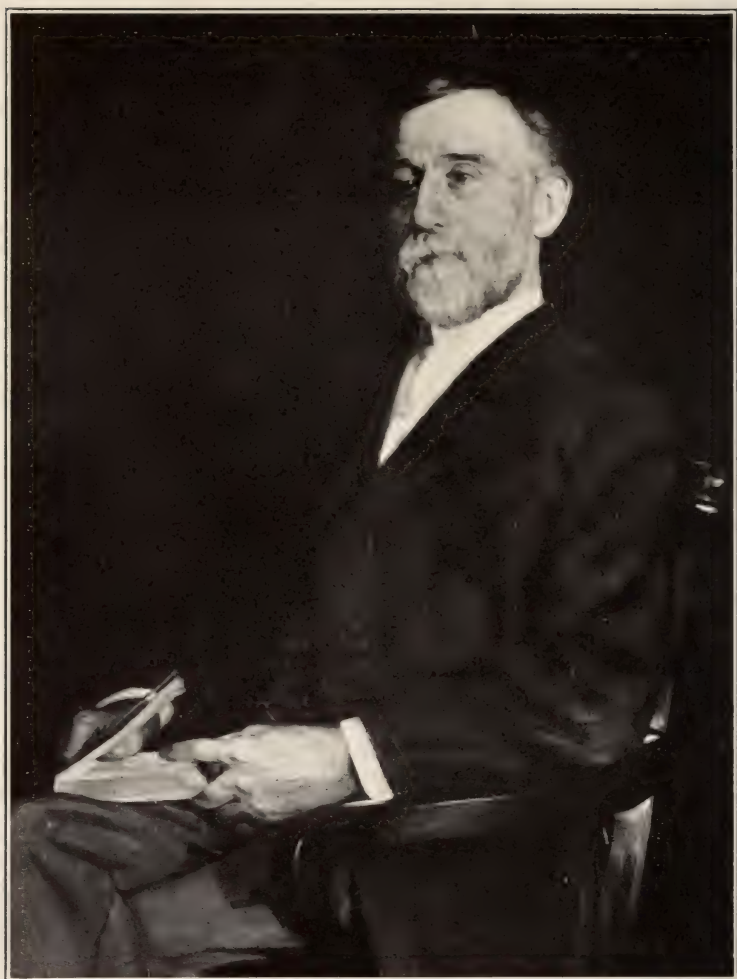
WILLIAM SPENCER, M. D.

UTERINE ATRESIA AND AMENORRHOEA.—Schiffmann says his studies show that back of the clinical picture of the infantile hypoplastic uterus, serious pathological changes may be hidden, which are not clinically recognizable and which can only be revealed by histological examinations. Only such findings obtained if possible in the uteri of tubercular patients before the advent of puberty, are able to clear up the question of the aetiological relation between tuberculosis and amenorrhoea, and between tuberculosis and atresia. In this way it was possible for the author to demonstrate by means of histological examination of the extirpated organ the possibility of healing of uterine tuberculosis suspected because of its clinical symptoms, and at the same time to show that this healing of tubercular processes may lead to the development of atresia.—*Arch. f. Gyn.* vol. 103—1

THEODORE J. GRAMM, M.D.

INDICATIONS AND LIMITATIONS OF PYOLOGRAPHY.—Casper says the method of pyelography introduced in 1905 by Völcker and Lichtenberg consists in the introduction of a five per cent or ten per cent solution of collargol into the ureter and kidney pelvis and the taking of a radiograph. The author does not agree with the assumption of Joseph and others that the injuries produced by this method are in all cases due to faulty technique, especially from using the injected fluid with too great pressure. Even when the technical requirements are strictly fulfilled, it sometimes happens that vomiting, pain, cyanosis and fever up to 39.5°C are observed, and Rosenstein witnessed one fatal case. The author therefore believes the indications should be more strictly limited and more conservative methods used. He points out that dystrophy of the kidney may be determined by the introduction of a bismuth catheter with subsequent radiography, and kidney tumors may be distinguished from intraperitoneal growths by distending the colon, the tympanitic percussion note will distinguish from the retroperitoneal position of the kidney tumor. The author concedes pyelography to have a place, but thinks it should be regarded as a last resort in kidney diagnosis.—*Abstr. Zeutralbl. f. Gyn.* 1914—1422.

THEODORE J. GRAMM, M.D.



yours Sincerely,
Rufus B. Weaver,
June 3. 1915.

THE HAHNEMANNIAN MONTHLY.

JUNE, 1915

THE GOLDEN JUBILEE OF RUFUS BENJAMIN WEAVER, A.M., M.D., Sc.D.,
MASTER ANATOMIST.*

BY

WILLIAM WEED VAN BAUN, M.D., PHILADELPHIA, PA.

THE question has been asked, how did Doctor Weaver come to give his life and his work to Hahnemann Medical College of Philadelphia?

Dr. Weaver was born and lived, until his literary education was finished, at Gettysburg, Pa. While not a soldier, he nevertheless received his baptism of fire during the three days' battle of Gettysburg.

Deciding to devote his life to anatomy, he came to Philadelphia and entered The Penn Medical University of Philadelphia.

Dr. Amos Russell Thomas was Professor of Anatomy at this institution.

Dr. Weaver's intense devotion to anatomy naturally attracted the attention of Dr. Thomas and an early acquaintance ripened into what proved to be a life-long friendship.

When Dr. A. R. Thomas decided to change his school of medicine and accepted the Chair of Anatomy in Hahnemann Medical College, he offered the Anatomical work to Dr. Weaver.

Dr. Weaver was a student of Dr. D. Hayes Agnew, one of the world's renowned surgeons and for many years Pro-

*The "Jubilee Address" delivered at the Annual Banquet of the Alumni Association of Hahnemann Medical College at the "Adelphia," Philadelphia, Pa., June 3, 1915.

fessor of Surgery in the University of Pennsylvania. Fifty years ago medical men, and most every one else, were narrow and prejudiced in their views. They delighted in fooling themselves by nursing and magnifying what they called "firmness of principles." Whatever these may have been in the beginning, they soon degenerated into mere "obstinacy of prejudice" and warped their judgment.

Agnew was not of this type. Neither was Thomas nor Weaver. Weaver, in a quandary over Thomas' offer, turned to Agnew for advice. Agnew regretted he had no immediate place for Weaver at the University of Pennsylvania so he urged him to accept, saying: "This is the opportunity of a lifetime and you do not know where it may lead you." I wish that Agnew were here to-night, so that we could honor him and thank him for his advice of fifty years ago, and that he could see for himself where his counsel has led Dr. Weaver to-night.

This was not all Agnew did for Weaver. Fifty years ago the control of anatomical material was crude and difficult. It was the day when no questions were asked as to the source of supply. It was the day of "body snatching." The distribution of the supply was under the absolute control of Agnew of the University of Pennsylvania and Pancoast of Jefferson, with the Penn Medical University of Philadelphia and Hahnemann together, as a poor third, and there was not enough to go round, and the weaker colleges were often overlooked. The goods were distributed by loads in turn, if you did not take your load your turn was lost forever and could not be made up.

Agnew promised Weaver he would help him in case of need. Weaver did get into trouble. He appealed to Agnew, and Agnew true to his promise, sent the next load intended for the University of Pennsylvania to the rescue of Hahnemann. For the next three years, or until Weaver was firmly established, Agnew rendered him invaluable assistance in many ways. So we are indebted to Dr. Amos Russell Thomas and to Dr. David Hayes Agnew—two of God's noblemen, for the life service of

Dr. Rufus Benjamin Weaver,

a third of God's noblemen, and we are here to-night to help him to fittingly celebrate his Golden Jubilee.

This explains how we came to get Dr. Weaver. On the other hand, there have been two unsuccessful systematic campaigns to take him away from us. Each incident showed Dr. Weaver to be entirely unselfish and not mercenary. In 1893, while in Chicago in the interest of Hahnemann of Philadelphia, some of "our boys" who had become all powerful in the Homœopathic Department of the University of Minnesota, decided to remodel their anatomical department. They hunted up their old professor and offered him the Chair of Anatomy, with a salary four times what "Old Hahnemann" was paying him, and as an extra inducement promised him the responsible post of Dean, with an additional salary.

In 1900 a group of men connected with some of our numerous Homœopathic Colleges in Chicago, planned an ambitious amalgamation and insisted that Dr. Weaver should take the Chair of Anatomy and name his own salary.

His presence to-night proves his loyalty to "Old Hahnemann."

There is another item in the unwritten College History, long since forgotten, to which I will call your attention. Then we will go on with the man, the museum and the alumni.

Way back in the early seventies, before the Jay Cooke failure, an unexpected and unlooked for financial crisis threatened to close our college doors. This would have been just as great a moral wrong and an economic crime as to do so to-day. A brilliant, able and trusted member of the Faculty, having entire control of the finances of the College and enjoying the complete confidence of his associates, became, unknown to them, a victim of alcoholism. At the close of the college year, in early spring, of what they all supposed to be the most successful year in the experience of the College, this trusted colleague disappeared, taking with him every dollar he could collect, and leaving behind him more than one year's unpaid bills and obligations. It was a staggering blow, with no reserve or revenue to meet the expenses of the coming summer and fall until the receipts would again flow into the treasury. This crisis was met and carried successfully through twelve anxious months by one single man pledging his entire small fortune as collateral for a loan from Jay Cooke & Company. Out of love for us, he risked all he had and saved for us Our Alma Mater.

This man was—

Rufus Benjamin Weaver.

As a rule, men habitually use only a small part of their powers which they actually possess and which they might use to advantage under appropriate conditions. The truly efficient man is so much of a unit, so absorbed in his vocation, that the self consciousness, due to self-analysis, which eats up strength, is unknown to him. If a man does a thing well he is caught in the arms of a joy that takes his mind away from himself, if badly, he becomes corroded with anxiety. "The joy of accomplishment" is the secret of Dr. Weaver's splendid initiative and capacity to bring his work to full fruition and complete success. Here the essence of his patience was distilled. Out of this furnace came the enriching treasures of which we are the proud and fortunate possessors.

The Museum.

We have a Museum, whose treasures are unequalled by any other in the wide world. It is a practical museum; it is for use; it is thoroughly balanced; it has endless specimens, both wet and dry, for teaching or research. It is ready for the anatomist, the pathologist, the clinician, the internist, the surgeon, the gynecologist, the obstetrician, and for the specialist, be it the eye, ear, nose, throat, heart, lungs, stomach, intestines, kidneys, bladder or rectum. Whatever the subject, whatever is wanted, innumerable specimens are ready on call.

If the surgeon wants a fracture, it is there. If the medical man wants a normal or abnormal heart or lung, it is there. If the kidney specialist wants to show the results of Bright's Disease—the most complete and most beautifully mounted specimens in the world are right there. They are there by the thousands, and all are the skilled handicraft of one man. The Museum is the sole work of Dr. Weaver. It represents fifty years of unceasing, unwearying effort, a labor of love and infinite patience.

Dr. Weaver dreamed dreams and visualized them and embodied them.

That is the story of

Harriet Cole.

Harriet Cole was a poor, ignorant negro woman, age 36 years, with no superfluous flesh or fat. Anatomically per-

fect. She had greatness and world-renown forced upon her after death, by yielding up her entire Cerebro-Spinal Nervous System under the deft touch of the World's greatest Anatomist. "Harriet" was not the inspiration of a moment, or an hour, or a day; for eight years the question was considered and debated, how to vividly and successfully demonstrate the intricate cerebro spinal nervous system to the bewildered and puzzled medical students who passed by the thousands through our Anatomical Department. It was noted that these students would come to their final examination well posted on bones, muscles, vessels and viscera, but lame and halting on the brain and nerves. For eight years A. R. Thomas, the great associate of Weaver's, objected strenuously to the undertaking—acknowledging the great value of the proposed dissection, but realizing the many difficulties in the way and fearing for the health and life of his enthusiastic co-worker. He would not give his consent and he never did. Weaver, through ceaseless working and neglect of proper recreation, became slowly poisoned and sickened unto death. In alarm, his friends compelled him to go to Europe to regain his health. While slowly convalescing, he took every opportunity to search the Museums of Europe for his ideal dissection and found nothing, absolutely nothing.

On his return, with renewed health and strength the "idea" became insistent and compelling and with "Harriet" floating idly in the vat, he took the matter into his own hands and announced his decision to A. R. Thomas, who in turn roundly denounced him. For the first time in the long years of their association, Thomas failed to make his daily visit to Weaver's laboratory. He kept away for seven days and then gave up and returned, telling Weaver his stubbornness would kill him. The daily consultations were renewed and continued with ever-increasing enthusiasm, until the work was finished and until death finally separated these two good friends.

The dissection took nearly seven months. Every day in the week, from sunrise to sunset, through a hot and humid summer. Three great and troublesome obstacles to success arose. To keep the enormous number of nerves untangled. To keep the nerves from hardening by crystallization from the zinc chloride preservative and finally, the mounting. In addition to the seven months to dissect, it took seventy days of unceasing, laborious, skilled work and supreme patience to get

the specimen on the board. After nine months of gruelling contest, the work was successfully finished and to-day in the Weaver Museum, in Hahnemann Medical College, hangs the greatest and most wonderful dissection in all the world.

In the original dissection, the entire sympathetic nervous system with its chain of ganglia and nerve fibers was teased out—but had to be sacrificed in mounting.

In 1893 "Harriet" visited the Columbian Exposition at Chicago. She was popular and appreciated and returned home with the Exhibition Medal and its gorgeous blue and gold ribbon. All three now hang side by side upon our Museum wall.

I have spoken of but one specimen—the premier one of course, but there are hundreds of others, a few ranking in importance with "Harriet." Study your museum and learn its value. The collection is complete in every detail and is of rare beauty, showing the vital touch of the real artist.

The Weaver Museum is fifty years ahead of all others.

So richly has Dr. Weaver endowed our Museum that not one man in a hundred suspects its value and no one knows its real worth but its creator himself, and he is so modest he never will speak of it in public. He asked that nothing be said to-night. In apology for not yielding to his request, I will quote a few well-known words, some twenty centuries old:

"Let your light so shine before men that
they may see your good work."
The work of our Master is good.

Dr. Weaver's marvelous handiwork holds us spellbound in admiration and wonder, and we respect and admire his indomitable courage, his inflexible will and purpose, and his worthy ideals. But these do not explain the ever increasing bond of sympathy, the warm affection, the loyal devotion that grows stronger and stronger as the years roll on and on, between Rufus B. Weaver and we, his boys of "Old Hahnemann."

The students of Hahnemann are richly blessed in meeting Professor Weaver in their Freshman year. The year of first impressions; the year of lasting impressions. For fifty years a steady stream of men have carried away with them the helpful, stimulating and inspiring memory of his splendid com-

radeship, his sustaining enthusiasm and his willing sacrifice for our service. He taught us all the dignity of honest work. When we were weary and discouraged he comforted us and taught us not to shirk nor be afraid. When we felt we were ill-rewarded he gave us sympathy and kept us from selfishness and bitterness and taught us justice and love among ourselves. These personal charms added to his rare gift and distinction as an anatomist, tells the story. These are the things that firmly fix Rufus B. Weaver in our heart of hearts. This is the reason we pay him willing tribute to-night from overflowing and grateful hearts, and we rejoice in helping him celebrate his Golden Jubilee of fifty years of faithful service.

Rufus Benjamin Weaver!

Master of Arts, Doctor of Medicine, Doctor of Science, Professor of Applied Anatomy, our most precious and honored guest. To merit this tribute which we pay you to-night, is an achievement well worth a lifetime of effort. To have lived such a life is worth while.

Dr. Weaver! we your friends, your ardent admirers, your boys, command you to stand up.

Dr. Weaver! to-night you stand in a position of mighty dignity and honor, and we all wish to pay homage to the years and success you have attained. Here is a cross with four sides, representing the victory of surrender and sacrifice. You gave yourself and fifty years' service to us. The crossed scalpels are the instruments of your handiwork. The penons in blue and gold on a white base, with the letters "H. A. A." is the official insignia of the Hahnemann Alumni Association, of which we are all guests to-night. The ribbon is the real college colors.

The inscription reads:

"1865 JUBILEE 1915
Presented to
RUFUS B. WEAVER, A.M., M.D., Sc.D.
Professor of Applied Anatomy
By the Boys of
Old Hahnemann
In grateful appreciation.
June 3, 1915."

Doctor! this jewel has no intrinsic value, but as the outward and visible sign of the respect, the love and the admiration of the living Alumni of "Old Hahnemann" for you, it takes a value greater than the Congressional Medal or the Victoria Cross. Your boys have commanded me in their name to clasp this jewel around your neck, as a lasting token of their love and appreciation and I now do so.

Your boys have also ordered me in their name to hand to you this draft for one thousand dollars to manifest to you that our loyal devotion has the ring of real gold, and I now do so with the fond wish that the overruling Power that controls the destiny of man will keep you with us in the full measure of your strength and power for many, many years to come.

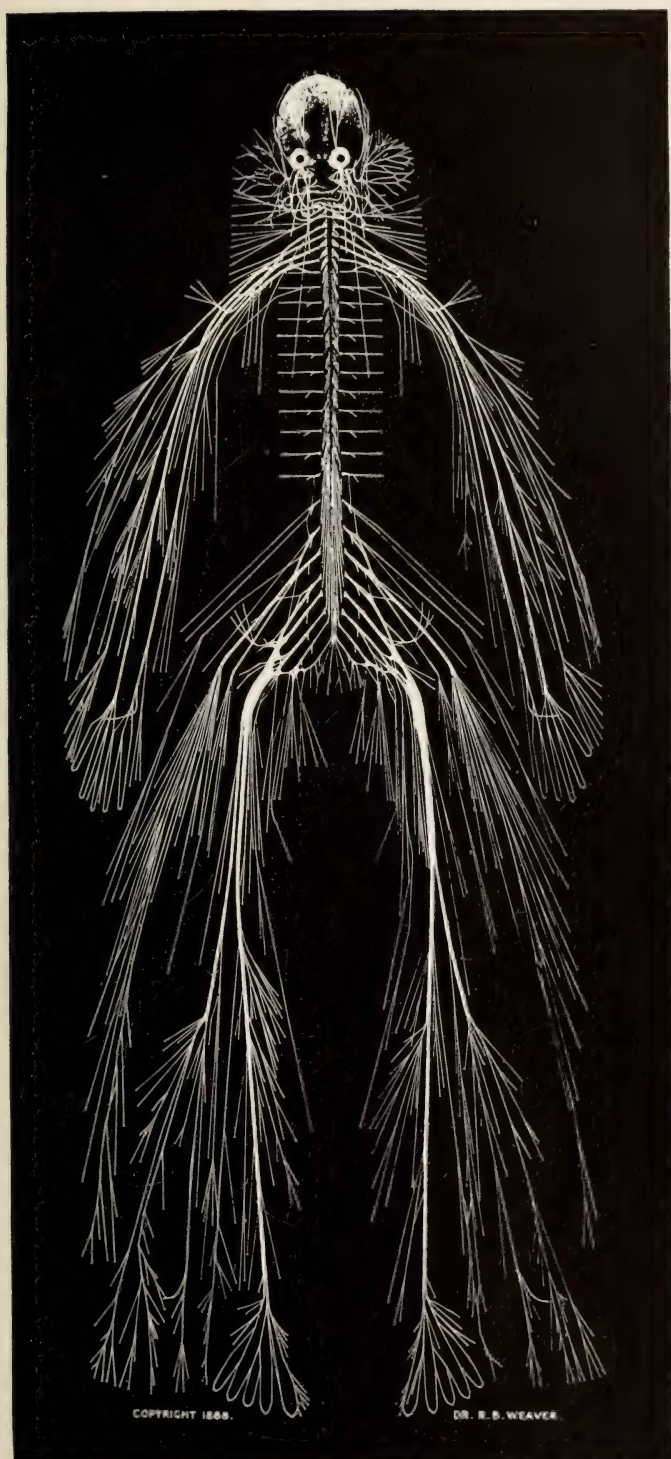
Dr. Weaver! we are not quite through with you. Last week Philadelphia had an epidemic of Knights Templar. This visitation suggests that it is customary to confer three degrees upon a man before you let him go, and we have three for our "Knight of the Scalpel."

It has been my rare pleasure and distinguished honor to confer upon you the degree of the "Cross of Service and Appreciation." Yours the service, ours the appreciation; and secondly, the degree of the "Draft of Love." Yours the draft, ours the love. The love we know is mutual. Your boys have a third degree for you to-night, that of the "Time-Keeper," the Master of Eternity, and your dear personal friend and beloved physician, William Henry Keim, will now confer this degree, with its appropriate emblems.

DOCTOR WILLIAM HENRY KEIM: Our dear Doctor Weaver. It is given to few men to have the honor and the pleasure which overwhelms me, as the representative of the Boys of "Old Hahnemann" in the performance of a very pleasant duty.

To attempt to express the feelings of our hearts would only reveal the poverty of words at my command. We can never repay you for what you have done for us. Our appreciation is too deep and is too heartfelt to be represented by gold, and when we present you with this watch and chain and pencil, we wish you to remember that it is only a token of the love that The Alumni have for you and will as long as you live.

It is inscribed thus:



CEREBRO-SPINAL NERVOUS SYSTEM

Dissected and Mounted by
RUFUS B. WEAVER, A. M., M. D., Sc. D.

RUFUS B. WEAVER, A.M., M.D., Sc.D.

Professor of Applied Anatomy

From grateful Alumni

In honor of Fifty Years as a teacher
of Anatomy.

1865—1915.

Kindly accept it with the best wishes of every one of your
"boys" who insist that you wear it every day,

And when the coming twilight

Turns to starlight,

may it have the power of suggestion, the power to recall bygone associations, the touch of absent hands, and the sound of voices that are still. May you live long to enjoy your honors and when called to rest on the hillside of life, may your happy spirit press onward and upward, ever upward to receive from the Great Physician the welcome plaudit well and faithfully done.

Then—Angels ever bright and fair, take, oh, take him to your care.

The class of 1910 presented Dr. Weaver with a gold scalpel and Dr. E. Burrell Fanning, 1885, Cripple Creek, Col., a gold nugget stick pin.

DR. WEAVER'S ADDRESS.

Mr. President, Members of the Alumni Association and Distinguished Guests:

I APPRECIATE the honors, so great, conferred upon me, one of the most humble of the Hahnemann Alumni.

Your worthy representative, Dr. W. W. Van Baun who, as well as every Member of the Association, is a warm personal friend, has told the history of my life concisely, beautifully and absolutely correct. But, in the telling of that story, no one in my presence, can appreciate the depth of gratitude that I feel in return. There are no words adequate to express my feelings and I am overflowed with the memories which that concise biography calls forth. I would that I might be able to respond to the history so thoroughly and superbly given.

Dr. Van Baun makes reference to my entrance into this special line of life work; he made mention of two souls, Dr. A. R. Thomas and Dr. David Hayes Agnew.

But for those two men, God only knows what would have been the course of my life. "There is a Divinity which shapes our ends;" it is not for man to say, "I guide my steps."

When reference was made to Dr. D. Hayes Agnew, one so high in the realms of fame, worshipped by his School of Medicine as no other man, in his generation, and worthily so, as my friend and benefactor, my heart was filled with undying love and gratitude.

These facts, mentioned by the speaker, were, to me, a sacred trust and, human lips could not divulge, the favors which had been given to me. It only shows, gentlemen, the character of those two men, and I can recall when that dear man placed his hands just in this position and said, "If I had not so long a list of applicants I would know just what to do with you. I know that Dr. A. R. Thomas is just such a one as you should be associated with." It was that suggestion, that led me along the way I have passed these many, many years.

Dr. Thomas is revered to this day, his hands were ever doing good, the right hand not knowing what the left did; it was, under the influence of these two men, that I have been carried along in my life's pleasure; it was not work; and, through the guidance of Dr. Thomas, the great and good man, I could never understand his interest in me; ready, at all times, to give me a demonstration, and, it was through him, that I have been enabled to give these young men a clear understanding of the great subject of Anatomy.

I am free to make the statement that every student, without an exception, that has been under my guardianship, manifested unexceptional deportment, demeanor, and untiring industry. Gentlemen, that is what controlled my heart to its utmost ability; under those circumstances, I found the kindly association, between you and me, united us, as by hooks of steel, from class to class, from individual to individual, and now, at this advanced time in my life, when I am facing the evening dawn, it is a great satisfaction to me, that I have never had the slightest difference with any medical student, and why that should be my experience, without exception, I cannot understand—I do not know. (Cries of "We love you, we love

you.") The delegation from Washington did not need to make that statement.

I never made what, to me, was a sacrifice for any of you, and, I feel, that I should not speak further; I am waiting for the treat that I know we will all enjoy, viz., the addresses of the distinguished guests.

My soul overflows with inexpressible gratitude for the distinguished honors conferred upon me, one of the most humble of you all. What I have done has been a work of love. If I were asked the definition of work, I would reply, the doing of something for our fellow man.

I had the good fortune to sleep well, and the night's rest and the breakfast recuperated me, and, I assure you, the grasp of your hands stimulated me.

One of the greatest pleasures I have, as I look down the vista of the past is, that you men don't grow old (a voice, "Neither do you"). I remember the statement of my saintly Mother who said: "Rufus never let them say you grow old." She said to me (oh I shall never forget it), "When you go away and temptations arise on every hand, always say, No." And I always said, No. I owe my salvation to right, justice and truth.

When I look back to the year 1871 and see that class, my friend on my left—Dr. Wm. H. Keim—I feel what an honor that I had just a mite in the shaping of this great man, an honor to us all. He utilized his opportunity, and success was his reward.

Again, some young men have not taken advantage of their opportunities. I could give you illustrations of what many a young man has done.

I recall a young man with nothing but debt over his head who spent his whole winter with nothing but a tallow candle for light and heat; the next winter he went, on South Street, and bought a little stove, putting it on his shoulders, and, like a man, carrying it to his den; to-day he is successful and respected.

Another, when he received his degree of Doctor of Medicine, in the Academy of Music, he said he sat there and thought he was all alone in the world, he felt unworthy of the degree that had been conferred upon him and, realizing the responsibilities of the future, decided, for monetary reasons, to associate himself with a well known practitioner for a

limited period, and then complete his studies in Europe. When he returned his rise was rapid and, to-day, he is on the pinnacle of surgical fame.

I am proud to be the Professor of Applied Anatomy in Hahnemann Medical College; you have had a lesson in loyalty to Old Hahnemann.

I will simply say, if you love us, as we love you, just give us a demonstration of the fact, by sending us your students. We are living in a day, gentlemen, when we must have the facts. The gentlemen of the legal profession say, we must have the facts. Demonstrate the fact that you are loyal to your friends here and your Alma Mater.

Again thanking you from my heart,—words cannot do it,—I will simply say that I entertain the profoundest gratitude for you, in the distinguished honor you have conferred upon me.

CHRONOLOGY.

RUFUS BENJAMIN WEAVER.

- 1841 —Born 10 January, 1841, at Gettysburg, Pa.
Son of Samuel Weaver and Elizabeth Ann Rinehart.
- 1869 —Married, 21 December, 1869, Miss Madeleine Louise Bender,
at Philadelphia, Pa.
- 1862 —Graduated from the Pennsylvania College, Gettysburg, Pa.
- 1865 —Master of Arts, Pennsylvania College, Gettysburg, Pa.
- 1865 —Graduated from the Penn Medical University, Philadelphia.
- 1865 —Special Course in Practical Anatomy with Dr. D. Hayes Agnew
at University of Pennsylvania.
- 1865-1869—Demonstrator of Anatomy.
- 1865-1869—Prosecutor of Anatomy for Dr. A. R. Thomas at the Penn
Medical University.
- 1867-1869—Prosecutor of Anatomy for Dr. A. R. Thomas at the Hahnemann
Medical College, Philadelphia.
- 1868-1869—Took general course in University of Pennsylvania.
- 1869-1870—Took Clinical course at Jefferson Medical College.
- 1869 to date—Demonstrator of Anatomy at Hahnemann Medical College.
- 1870-1873—Exhumed on the battlefield at Gettysburg the remains of 3320
Confederate Soldiers.
137 were shipped and reburied at Raleigh, N. C.
101 “ “ “ “ Savannah, Ga.
74 “ “ “ “ Charleston, S. C.
2935 “ “ “ “ Richmond, Va.
73 “ individual removals.
- 1877-1896—Lecturer on Regional Anatomy at Hahnemann Medical College.

- 1885 —Honorary Member of the Germantown Homœopathic Medical Society of Philadelphia.
- 1888 —Dissected and mounted Human Cerebro-Spinal Nervous System (nine months).
- 1890 —The Westminster School of London accepted with thanks "Intestinal Specimens."
The Museum of the Royal Surgeons, London, England accepted an engraving of the Cerebro-Spinal Dissection, with inscription, through Dr. Alfred Edward Heath, F. R. S., London and M.D., Hahnemann Medical College, Philadelphia, 1890.
- 1891 —Doctoris Medicinæ Gradum Honorarium by Hahnemann Medical College.
- 1891 —Member Alumni Association, Hahnemann Medical College, Philadelphia.
- 1893 —Exhibited dissection of Human Cerebro-Spinal Nervous System and one thousand Specimens at Columbian Exposition, Chicago, Ill. Received Exhibition Medal and Ribbon.
- 1896 to date—Professor of Applied Anatomy, at Hahnemann Medical College.
- 1906 —Exhibit of Museum, 1000 specimens, covering 1200 square feet of floor space, at Seventh Quinquennial International Homœopathic Congress at Atlantic City, N. J.
- 1907 —Doctoris Scientiæ Gradum (Sc.D.) by Pennsylvania College, Gettysburg, Pa.
- 1915 —Golden Jubilee Celebration 3 June, 1915.
- 1915 —Honorary member Homœopathic Medical Society of the County of Philadelphia, 10 June, 1915.
- 1865 to date—Taught 3000 men Anatomy and prepared for dissection 1800 bodies.

EPIBULBAR SARCOMA WITH MICROSCOPIC AND MACROSCOPIC SECTIONS.—

The patient, a female, seventy-five years of age, gave a history of a tumor of the left breast removed twenty-five years previously. She noticed a small black spot at the outer margin of the cornea.

The left eye showed a small black tumor mass, situated between the insertion of the external rictus and the corneal margin. The triangular area of slight pigmentation in the conjunctiva, coincided with the margin of the tumor. The tumor measured 8 x 5 m.m. Enucleation was performed and the microscopic examination of the records showed a mixed cell melanotic sarcoma. Examination of the records of the Manhattan Eye, Ear and Throat Hospital shows only four epibulbar sarcomata out of one hundred tumors of the conjunctiva. The tendency of the tumor is not to penetrate the globe but to recur locally and to produce metastasis.

Statistics of Verhaeff and Loring prove beyond doubt that epibulba sarcomata should be dealt with as radically as sarcomata in other parts of the body. Of seventy-three published cases, it is known that recurrence took place in thirty-six and perhaps in more. It should be briefly stated that small pigmented tumors situated wholly within the conjunctiva and freely movable, showing no tendency to show proliferation, should not be classed as sarcomata and thus should not be dealt with so radically.—*Dr. L. M. Criglen. Arch. Oph.*

Transactions of the Homoeopathic Medical Society of the State of Pennsylvania.

FIFTY-FIRST ANNUAL SESSION

THE TREATMENT OF HEART DISEASES BY INTERNAL REMEDIES.

BY

G. HARLAN WELLS, M.D., PHILADELPHIA.

A SOMEWHAT extended observation leads me to believe that physicians frequently fail to cure or relieve patients suffering with cardiac disease by medical treatment because they have little or no confidence in the remedies they employ. This seemingly trite observation is, after all, a matter of great importance, as the first essential in the therapeutic management of such patients is that the physician should have confidence in the efficacy of the treatment he proposes to institute.

We find today, in the dominant school of medicine, and to a lesser extent in the homœopathic school, a growing feeling that drugs are of little or no value in the treatment of cardiac diseases. The doctor who believes this is committing an error when he prescribes internal remedies for such cases. If he has no faith in internal remedies he should earnestly seek for some method of treatment, mechanical, hygienic or psychic, in which he *can* place his confidence. If he is not able to discover any such therapeutic system, he had better give up the practice of medicine.

I am convinced that much of the scepticism in regard to the efficacy of internal remedies in the treatment of cardiac disease is based upon a misconception of the purpose and aim of medical treatment. Many have been discouraged by the question of the therapeutic sceptic: "What remedy can possibly remove excrescences from the aortic valves?" or "What drug can dissolve calcareous deposits from the coronary arteries?" Obviously the restoration of valves and of calcified arteries to a normal condition by means of drugs is an impossibility

and the therapist who has studied carefully the writings of Samuel Hahnemann and who has endeavored to discover what is curable in disease, will waste no time in the attempt to do so.

The real object of treatment in cardiac disease, from the standpoint of the practical physician, is to render the heart capable of carrying on an efficient circulation.

Day by day in our hospitals and at the bedside, it is being demonstrated that the properly indicated remedy is capable of bringing about this result by so improving the condition of the heart muscle that a circulation sufficient to meet ordinary needs of a patient's life can be maintained despite the persistence of distorted valves or of deteriorated arterial walls. The physician who can bring about such results need spend little time finding fault with his remedy because of the persistence of a murmur or of an accentuated valve sound. We should, therefore, enter upon the treatment of a cardiac condition confident of the fact that our internal remedies, in connection with appropriate hygienic and dietetic measures, are capable of doing an immense amount of good and that in instituting such treatment we are giving the patient the advantage of the very best method of therapy available at the present time.

The doctor who is convinced of the value of the indicated remedy will not be content with a haphazard selection of a drug, but will attempt to make a thorough study of the etiology and diagnostic features of the case, as well as an analytic study of the subjective and objective symptoms, before deciding upon the drug that is likely to exert a curative influence.

However, it is not *merely* enough to select your drug with care. I find it important to give the patient exact instructions as to the use of the remedy and to advise him as to what effects you expect to obtain. Some may object that this is introducing an element of suggestion into the prescription. A discussion on this point would be foreign to the object of my paper, but I am sure that all practical physicians will agree that favorable action of a drug is far more likely to ensue when it is confidently expected by both the patient and the physician.

In attempting to take up *seriatim*, the various drugs useful in the treatment of cardiac diseases, we are confronted by such a wealth of material that anything like a comprehensive review of the subject would be impossible in the limited time avail-

able. I shall, therefore, speak briefly concerning a few of the remedies that have proven most frequently of value to me in clinical work.

Aconite. The wide field of usefulness of aconite in the treatment of cardiac diseases was first brought to my attention by Dr. Wallace MacGeorge of Camden.

The value of this remedy in the early stage of acute endocarditis if accompanied by fever is generally recognized. Its importance in various forms of cardiac neuroses and in painful affections of the heart, such as the so-called true and pseudo angina-pectoris, is less commonly recognized. Where a neurosis has its origin in fright or some profound mental impression productive of fear or apprehension, especially when accompanied by a rapid, throbbing pulse, aconite will be found a remedy of great usefulness. In valvular and myocardial diseases accompanied by attacks of sharp lancinating pains in the region of the heart accompanied by apprehension or fear of death, aconite has proved a valuable remedy. The relief afforded by this drug in some instances is indeed remarkable and I have been more than once surprised myself at the completeness and permanency of the relief following its administration.

Actea Racemosa should be thought of especially in connection with cardiac neurosis and in affections of the heart resulting from rheumatic fever. Pain around the cardiac region accompanied by palpitation and a feeling of suffocation, associated with a rapid and irregular pulse, are symptoms suggesting the use of actea. Bartlett states that it is preëminently a remedy for cardiac neurosis occurring about the climacteric period and that it is frequently valuable in women suffering from nervous atony accompanied by palpitation of the heart with weak, intermittent pulse.

According to Hale the symptoms of actea are aggravated by the emotions and subside during sleep.

Arsenic. either in the form of arsenicum album or the iodide of arsenic, is a remedy of recognized importance, especially in the treatment of organic forms of cardiac diseases. This drug has the power to profoundly affect the nutrition of the cardiac muscle and when indicated it should usually be administered in small doses for a long period of time. It has proven valuable in cases of chronic myocardial degeneration in which compensation has been more or less completely re-

stored. Many homœopathic prescribers speak highly of it in cases of cardiac dilatation with dyspnœa and dropsy. My own observation has been that we have other remedies of much greater value in the presence of such acute emergencies. In cases of chronic heart disease such symptoms as excessive weakness, gastro-intestinal irritability, loss of flesh, anemia, and perhaps a burning sensation around the precordial region, should always direct our attention to arsenic as a possible remedy. My personal experience with the iodide of arsenic has been such as to lead me to favor it in preference to the arsenicum album in the majority of cases. The manner of preparation of this drug is important, if the best therapeutic results are to follow. The drug should always be triturated for but a short time in a semi-dark room and should be kept in dark bottles tightly corked, or preferably, should be put up in capsules. One or two grains given two or three times a day over a period of four to six weeks is an excellent method of securing results from this remedy in the old cardiopath with sclerotic arteries. It is often well to follow the administration of the iodide arsenic by chloride of gold, giving this remedy for a period of six weeks and then return to the iodide of arsenic again.

Aurum Muriaticum is frequently indicated in fatty degeneration of the heart and in sclerotic and atheromatous changes in the heart and blood vessels. There is frequently a peculiar sensation of heaviness about the heart with a sudden arrest of breathing. Accompanying these symptoms we find the peculiar mental condition that is associated with aurum, namely, an uneasiness in the head with mental anguish and depression. It is a remedy often useful in old people with attacks of palpitation of the heart at night associated with debility.

Cactus grandiflorus is a remedy that has attained an excellent reputation in the treatment of cardiac disease among the physicians of all schools of practice.

The attempt of certain pharmacologists to discourage the use of this remedy, because of their failure to obtain any decided physiological action on animals should not deter the practical physician from employing the remedy on its well-known clinical indications. Doctors are more concerned about relieving the sick people than they are about accelerating or diminishing the pulse rate of frogs and rabbits. The field of usefulness of this remedy is in cardiac neuroses, in the less

serious forms of cardiac irregularity and in mild forms of cardiac weakness when associated with valvular disease or when resulting from protracted illness. Palpitation, the occurrence of extra systoles and disturbances of the heart resulting from the excessive use of tobacco or coffee are decidedly benefited by the use of this remedy.

Personally, I believe it is a mistake to consider cactus a substitute for digitalis. It is a much milder drug in its action, has little or no effect upon the conductivity of the heart muscle and in no phase of its action either experimentally or clinically should it be confused with digitalis. The tincture, in my experience, administered over a long period of time, has been the most effective way of administering preparations of this remedy.

Convallaria. According to Cowperthwaite this remedy acts best when the right heart is diseased. On this account we find it particularly useful in dyspnoea and in conditions associated with pulmonary congestion. Dr. Hale states that in women with functional or structural diseases of the heart with great nervous irritability and hysterical manifestations, convallaria gives more relief than any other drug. It is at times valuable in cardiac dropsy, although I cannot agree with some writers that it ranks with digitalis in its efficiency in dilated heart with ruptured compensation.

Crataegus oxyacanthus is a remedy suitable in a general way to the same type of case as cactus. It lacks the vise-like sensation about the heart so frequently complained of when cactus is indicated. Its chief indications are a weak, rapid or irregular pulse accompanied by shortness of breath on exertion and perhaps by evidence of slight circulatory failure. I have never seen it prove of value in a case of ruptured compensation.

Digitalis. The characteristic indication for digitalis in potentized form is a slow, irregular type of pulse which is frequently accompanied by sensation as if the heart would stop beating if the patient moved. Among other characteristic symptoms are blueness of the skin and faintness or a sinking feeling in the region of the stomach and a sensation of great weakness.

Gelsemium. Gelsemium is frequently indicated in cardiac neuroses and in threatened cardiac paralysis following infectious disease. The patient is usually quite nervous; the action of the heart may be irregular with frequent extra systoles and

a soft feeble pulse. Tremor and weakness are often present and the patient will often awake from his sleep with the feeling that the heart would stop beating if he did not move about.

Ignatia should be thought of as a remedy in neurotic women suffering from palpitation and pain around the heart accompanied by flatulent dyspepsia and other digestive disturbances. The mental attitude is usually that of fear accompanied by sadness and weeping alternating with undue hilarity.

Nux vomica is a remedy that is not used as frequently in diseases of the heart as its importance warrants. In paroxysmal tachycardia, palpitation of the heart, extra systoles and a variety of cardiac neurosis having their origin in gastrointestinal disturbances this remedy occupies an important place. When *nux* is indicated the well known mental irritability usually exists with coated tongue, distention of stomach by gas and decided aggravation of the cardiac phenomena after eating or where gas is present.

CARDIAC TONICS AND STIMULANTS.

The use of cardiac tonics and stimulants requires a great deal of care and discrimination on the part of the prescriber. There is no question but that remedies of this character are greatly abused. On the other hand, many of the so called cardiac stimulants probably have little or no effect upon the heart, especially upon the diseased heart, and hence their failure to accomplish much for either good or ill.

Digitalis. *Digitalis* is by far the most important physiological remedy in cases of ruptured compensation and in serious forms of cardiac arrhythmia.

After a century of conflicting experience and of confused pharmacological experimentation, we have at last, through the epoch-making work of Lewis and MacKenzie and others, arrived at a definite understanding of the practical indications for this drug. It is worthy of note that this step in cardiac therapy was secured by careful study of patients at the bed side and not in the laboratory of the experimental pharmacologist. The most immediate and most satisfactory results from the administration of *digitalis* are obtained in that form of cardiac irregularity known as auricular fibrillation. This condition formerly referred to as delirium cordia, is recognized clinically by a rapid pulse which constantly varies in its rhythm

and in its force. It is accompanied in the vast majority of cases by distinct or even severe evidence of circulatory failure such as dyspnœa, œdema of the extremities, dilatation of the heart, passive congestion of the liver, kidneys and other organs. Given such a case with sufficient cardiac muscle intact to respond to the action of the drug, the results of its administration are well nigh marvelous. Within 2 or 3 days the rate of the pulse may be reduced approximately to normal and the regular rhythm completely or partially reestablished. Along with the improvement in the rate and rhythm of the heart, we will notice a clearing up of the œdema and relief of the dyspnœa and a decrease in the size of the dilated ventricles. In such cases, digitalis, without exaggeration may well be termed a life-saver. The dose of digitalis to be employed varies with each case—sufficient must be given to steady the heart and reduce its rate. In an average case fifteen drops of a physiologically tested tincture, or one grain of the powdered leaves in a capsule, three times a day will be sufficient; in severe cases almost double this amount of the drug may have to be given. In all cases its administration should be carefully watched and the dose materially reduced as soon as the pulse rate reaches seventy. It is important to emphasize the fact that all such cases should be kept in bed. Failure to reduce the dose of digitalis when the pulse has been slowed to its normal rate and failure to keep these patients at rest in bed are two factors that are responsible for the majority of deaths attributed to the so-called cumulative effect of digitalis. In failing compensation, and dilatation without any disturbance of cardiac rhythm, digitalis also exercises a beneficial effect but is by no means as positive and effective as in the condition just referred to.

Stropanthus. Stropanthus ranks next to digitalis in its ability to influence favorably dilatation of the heart, and the type of arrhythmia frequently associated with it. This drug is by no means as widely applicable as digitalis, and the old idea that it should be used in cases in which the blood pressure was elevated while digitalis was supposedly contra-indicated in such cases has been proved to be based upon a misconception. For reasons difficult to explain however, we occasionally meet with cases of dilated heart that will respond to the action of stropanthus when digitalis has failed. The usual dose of the drug is five drops of the tincture four or five times a day. In

some cases of auricular fibrillation with serious symptoms requiring rapid action, the intravenous injection of 1/200th of a grain of stropanthinin has been found to be of value in steadying the heart until the more slowly acting effect of digitalis could be obtained by the administration of the latter drug by mouth.

Strychnine is a remedy that has attained an almost superstitious reputation as a cardiac stimulant among the medical men in general which I am convinced is largely undeserved. In fact I question very much whether strychnia is of any value whatever as a cardiac stimulant in cases of dilatation of the heart. It is a drug that undoubtedly improves the appetite and digestion in some cases, and in this way may possibly contribute to maintaining the strength of the heart muscle. It also seems to have a stimulating action upon the vasomotor center and in this way is of value in mild shock and in asthenia following acute diseases, by toning up the walls of the vessels and preventing the heart muscle from wearing itself out upon a relaxed vascular system.

When failure of tonicity of the heart muscle takes place and dilatation with dropsy sets in, for all practical purposes the drug is useless.

Theobromine and *Caffeine* are drugs having a somewhat similar action that are frequently valuable as cardiac stimulants. Both of these drugs tend to raise the blood pressure and to increase the flow of blood in the coronary arteries. Theobromine especially has also a decided diuretic action. On account of its diuretic action, theobromine is frequently valuable in dilatation of the heart associated with general anasarca. It is necessary to combine the drug with some other substance to make it soluble, preferably with sodium acetate or sodium salicylate. The dose of acettheobromine sodium is five to ten grains every three hours.

Nitroglycerine and other nitrites are frequently referred to as cardiac stimulants. As a matter of fact these drugs exert their influence upon the vasomotor system, producing a very decided vasodilatation, thereby diminishing resistance of the blood flow and lessening the resistance to the action of the heart. They exert no direct action on the heart muscle at all and are indicated where it is desirable to lower blood pressure. They should never be used in the relaxed conditions of the

vascular system with the soft flowing pulse that frequently follows pneumonia and other infectious diseases. The dose of nitro-glycerine is from one to five drops every hour according to the toleration of the patient.

OBSERVATIONS UPON THE ACTION OF THE HOMŒOPATHIC REMEDY RELATIVE TO DIAGNOSIS AND PROGNOSIS.

BY

R. F. RABE, M.D., NEW YORK.

(Read before the New Jersey State Homœopathic Medical Society).

IN the treatment of his patient the physician always tries to make a diagnosis; to find out, if possible, just what is abnormal in the tissues of the patient and the presence, state and extent of any pathological changes. Although the ideal diagnosis, which means an absolutely correct one, is rarely arrived at, nevertheless it is the object toward which all physicians strive. Its importance is conceded by all, for although it is occasionally possible for the physician, especially the homœopath, to treat even successfully a patient in whose case no diagnosis has been made, nevertheless such treatment is usually both uncertain of results and unscientific in character. For example, many a case of arterio-sclerosis has been more or less successfully treated, even though the prescribing physician did not know what he was actually dealing with. Sooner or later such a physician is bound to meet with unpleasant surprises, which would have been obviated had a diagnosis been established in the first instance. Many a vaginal discharge has been prescribed for over a long period of time without the physician knowing or even suspecting its true origin and nature. In this manner physicians have gone on curing people into their graves, without ever realizing that their well intentioned efforts have at the most been palliative only.

It is absolutely true that homœopathic prescribing does not depend upon a diagnosis or upon pathological findings, neither is it at all necessary that in order to be curative, a drug must be capable of causing the pathological changes which it may cure. Thus to the best of our knowledge Cina has never

produced pneumonia, but it has frequently cured it. It is of course quite possible that, were drug provings pushed far enough, marked pathological changes would be brought about: indeed, this is altogether likely, since even a so-called functional disturbance must have some pathological change to cause it, however slight the latter may be.

In the making of a diagnosis, the remedy which has been homœopathically applied is frequently of aid in determining whether the case is after all one which comes within the scope of homœopathy. This statement sounds paradoxical, but really is not so. For example, an acute appendicitis may present a symptomatic picture of *Bryonia* and the remedy may even appear to relieve the pain from which the patient suffers. Diagnostic aids however, such as the blood count show that pus is rapidly forming. To fail to resort to surgery at this point may be to sacrifice a life. In this instance surgery is indicated and homœopathy primarily has no place. It serves rather as a great aid in helping to guide the case into safer channels. If, on the other hand, not only the pain, but all the other elements in the case had speedily improved, *Bryonia* would then have been entirely sufficient to restore the patient to health.

In a chronic case frequently changing indications for a remedy may indicate either an incurable case or one in which homœopathy can do little or nothing. Thus in pulmonary tuberculosis indications for remedies do often change every few days and remedies homœopathically selected seem to relieve but little or for a short time only. Quick response to a remedy in such cases should also be regarded with grave anxiety, since this usually foretells a hopeless condition. Thus in a case of acute pulmonary phthisis *Arnica* was remarkably well indicated by its striking characteristic symptoms. Its administration was followed by immediate, decided relief which was however of short duration. Various remedies now became indicated from day to day, but the patient died in seven weeks' time. In this case then, a knowledge of the fact just stated prevented the giving of a favorable prognosis after the apparently gratifying action of the *Arnica*, which in this case was superficially homœopathic only; but not really related to the basic or fundamental characteristics of the patient. Had these been prescribed for very early in the course of the disease before the latter had localized itself, or before any tissue

destruction had been wrought, arrest or even cure might have been possible. Lowered vitality means lowered resistance to disease infection and this is invariably shown by certain objective and subjective symptoms of the patient. A healthy man does not fall an easy prey to disease, an unhealthy one usually does. Some of us, when below the physiological par come down, if exposed, with pleurisy, bronchitis or pneumonia: others at the worst have a simple coryza or laryngitis. The latter are more resistant to infection or disease influence, the former are easy victims. In this connection we see the importance of Hahnemann's miasmatic theory, more particularly his reference to Psora.

The psoric individual we today regard as the tuberculosis candidate; if we take him in time we may save him, not only by putting him under the most favorable hygienic and dietetic conditions, but also by prescribing the deeply acting constitutional remedies, the antipsorics such as Sulphur, Calcarea, Lycopodium, Kali carb, Phosphorus, Silicea, etc. These remedies are indicated by the symptoms which are individualistic of the patient, regardless of any diagnostic entity which may be more or less present. For this reason the sweaty and offensive feet of the Silicea patient mean more than a mere diagnosis of bromidrosis, which high sounding and awe-inspiring name, though it may be impressive to the sufferer, is of no value to either patient or physician, unless the latter sees in it an expression of a constitutional bias which needs correction, but not suppression.

Correction is brought about by carefully prescribing the remedy which is homœopathic to the patient as a whole, regardless of diagnosis; suppression is secured by paying attention to the one symptom only and downing this by unrelated, unhomœopathic, external, forcible means. The dangers of such suppression are by no means slight and must be apparent to any physician whose powers of observation and deduction have not been stunted by pseudo-scientific learning. Where, in such a case, the foot-sweat gradually disappears under the action of the suitable internal remedy, and the general state of health of the patient improves at the same time, the prognosis becomes correspondingly favorable; but where on the other hand such sweat improves, but the patient himself does not, the reverse is the case. Here we have a state of affairs in which pathology has advanced too far, so that the remedy is not capable of arousing

sufficient reaction to not only cure the foot-sweat, but also to eliminate the pathological process in the lung or wherever situated. If any relief is obtained at all it will be of short duration, and the progress of the disease is little or not at all interfered with.

Relative to the subject of diagnosis, it may be said that a correctly chosen remedy is of assistance in forming a conclusion. For example, mental dullness, difficult concentration, sleepiness, slow pulse, amelioration in the open air, are suggestive of *Myrica cerifera*, a remedy which has a marked action on the liver. The same symptoms are suggestive of some functional disturbance of this organ, or of the gall-bladder and ducts. Add to the picture slight jaundice beginning to increase and light colored stools, the suspicion of some liver disease is increased. Here then the selection of the remedy homœopathic to the condition has aided in the establishment of a diagnosis. To be sure the latter may still be uncertain, inasmuch as a cirrhotic or a cancerous condition may be at the bottom of the trouble. If so, the apparently similar remedy will either palliate the disease for a time, or will be incapable of affecting its progress at all. In this case we may be sure that we are dealing with a disease, so far as homœopathy is concerned, entirely beyond its power to help.

A recent case in point, in my ward in Flower Hospital, will be of interest. A woman was brought in with symptoms typical of *Chelidonium majus*, even to the sensation of a narrow band tied tightly around the waist. The remedy was prescribed by my clinical assistant, Dr. P. W. Bergen, and improvement followed. Within a few days however, severe gall-stone colic with indications of obstruction, caused the immediate transference of the case to the surgical side. Operation was fully justified by the findings. Here then was an acute case in which not only diagnosis and prognosis were influenced by the remedy selected, but the necessary surgical interference as well.

Homœopathic physicians have often been accused of hanging on too long in the medicinal treatment of their cases when these more properly belonged to the surgeon or other specialist. There is really no excuse for this accusation, since there is nothing in Hahnemann's philosophy which invites it. The homœopathic physician can be both loyal and consistent with the basic principles of his science and art and at the same time

be mindful of his limitations and of the rightful existence of methods of treatment other than his own. In its own sphere homœopathy is supreme, but its sphere is not and cannot be justly claimed to be universal.

THE INTRASPINOUS TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM.

BY

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THE altered attitude of the medical profession toward syphilitic affections of the nervous system is principally due to two recently demonstrated facts. One of these is the discovery of the organism of syphilis in the lesions of paresis and tabes and the demonstration that these diseases mean active syphilis of the nervous system.¹ We can no longer consider them parasymphilitic or remotely connected with lues: they are frankly of a syphilitic nature and must be treated as such. The other factor of influence is the demonstration that the choroid plexuses which are responsible for the cerebro-spinal fluid are at the same time remarkably selective in the substances they secrete and are almost impermeable to foreign substances such as drugs.² This means that while the blood stream may contain large amounts of salvarsan or mercury, little or none passes out into the cerebro-spinal fluid.

The therapeutic problem thus becomes obvious. Granted, that on the one hand we have an infection involving certain tissues and on the other specific curative agents for the particular infection, the logical plan is to bring them together, provided the result will not be damaging to the tissues. In the case of tabes and paresis, this may apparently be accomplished in several ways.

In the first place, though the choroid plexuses hold back from the spinal fluid most of the anti-syphilitic drugs, a small or infinitesimal amount may escape and circulating in the fluid bathe the nervous tissues.³ If the most intensive treatment with salvarsan is employed, as by frequent intravenous injec-

tions, the cerebro-spinal fluid may contain a detectable amount of arsenic and the results, with due precautions, are free from danger and in some cases quite satisfactory. This more conservative method of reaching the nervous system by saturating the circulation with luetic specifics has a number of adherents.⁴

The radical extreme to the above is the direct introduction into the spinal canal by lumbar puncture of small amounts of salvarsan and neosalvarsan. Animal experiments showed that salvarsan, used in this way, even in very small doses, was quite irritating and that even the less irritating neosalvarsan should be used with caution.⁵ The early use of the direct intraspinal injections of neosalvarsan gave some very unpleasant effects⁶ and even fatalities.⁷ But careful work has produced several methods which seem free from danger and productive of very satisfactory results. Among these is that of Ravaut,⁸ employed and recommended in this country by Wile⁹ with the reservation that the cases should be selected and restricted to those in which other forms of treatment have proved inefficient. The solution used for injection is a 6% solution of neosalvarsan (3 gm. in 5 c.c. water) in distilled water. This solution is hypertonic and each minim contains 3 mg. of the drug. The dose is 1 to 4 minims, equal to 3 to 12 mg. Lumbar puncture is done with a needle to which a small graduated syringe containing the drug may be attached. The outflowing fluid is allowed to mix with the drug solution in the barrel of the syringe and the mixture is then re-introduced. A smaller dose of neosalvarsan, from 2 to 6 mg., is used in preference by a number of clinicians.

Another method which has produced good results and has the recommendation of Fordyce¹⁰ is that of Ogilvie.¹¹ It concerns the use of the patient's blood serum to which an appropriate amount of a solution of salvarsan is added. The mixture is then incubated at 37° C. for 45 minutes and inactivated at 56° C. for one-half hour. Ogilvie's full directions should be followed closely. The solution is introduced by spinal puncture. The dose recommended for repeated use is .25 to .5 mg. and the importance of keeping the dose within 1 mg. is particularly emphasized. It is noteworthy that Fordyce suggests that until we are more familiar with effects of serum fortified in vitro, the method of salvarsanizing serum in vivo is the one of choice. Still another method is that Byrnes,¹²

who advocates the use of inactivated mercurialized serum introduced intradurally.

A compromise between the system of using intensive intravenous therapy only and the direct intraspinous salvarsan or neosalvarsan treatment is the method of Swift and Ellis,¹³ one of the first successful suggestions for modern treatment of nervous syphilis. This method is probably the most widely used of such procedures and seems to be without danger and with a minimum of unpleasant after-effects. There are a number of reports testifying to its good effects, one of the most complete and satisfactory being that of Draper.¹⁴

The method is as follows: Forty to sixty minutes after an intravenous injection of salvarsan, 40 to 50 c.c. of blood are withdrawn and the serum obtained by quick centrifuging or slow clotting. In the former event, the intraspinous injection may be given the same day; in the latter, it is done the following day. The serum is used in a strength of from 40 to 100%, the total quantity being 25 to 30 c.c. and the diluent normal salt solution. The serum mixture is then heated at 56° C. for one-half hour. This is important, increasing the spirocheticidal action.¹⁵ Lumbar puncture is done and about 30 c.c. of spinal fluid removed. This is allowed to flow through an attached rubber tube 40 cm. long and connected with the barrel of a 20 c.c. Luer or similar syringe or a small burette. The syringe barrel is held low so as to keep the tube full of spinal fluid and then filled with the serum. By raising the syringe, the fluid flows easily and slowly into the subarachnoid space. The patient is kept flat with head low for an hour or so and in bed for twenty-four hours.

The intravenous doses of salvarsan should be as large as the patient can stand, usually from .4 to .5 gm. The results from neosalvarsan are inferior. The interval between injections recommended by Swift and Ellis is two weeks, but Draper speaks of giving them at weekly intervals.

The duration of treatment is to be controlled not by the number of injections nor by the improvement in the patient's symptoms, but rather by the laboratory findings in the spinal fluid and blood. Each individual is a problem by himself in this respect. Some have shown most astonishing improvement after four or five treatments, others have received 36 or 37 intravenous and 18 intraspinous injections before satisfactory results were obtained. And others showed no im-

provement at all. With serum salvarsanized in vivo after the Swift and Ellis method, apparently any number of intraspinal injections can be safely given, but Draper warns against more than two or three consecutive treatments with salvarsan added in vitro after the method of Ogilvie.

The improvement is striking in the relief of pain and in the degree of ataxia. In a few cases, the Argyl-Robertson pupil has disappeared. Optic atrophy is not improved. There seems to be little or no effect upon the knee jerks. Psychic disturbances have in a number of cases cleared up entirely. Some patients gain weight and feel generally well.

Unpleasant effects are numbness and pain in the lower extremities shortly after the intraspinal injections. This, however disappears in about twenty-four hours, sometimes sooner. In the use of salvarsan or neosalvarsan prepared in vitro for spinal injection, some cases have shown serious paralytic symptoms, notably of the anal and vesical sphincters. Fatal cases have been reported following the direct use of salvarsan or neosalvarsan, but in such cases the operator has been needlessly careless in using large doses. As far as I know, there have been no fatal, serious or prolonged unfavorable effects in the use of the Swift-Ellis method. The method may fail to help a case but it does not harm it.

The findings in the spinal fluid in nervous syphilis are pleocytosis, an increase of globulin and a positive Wassermann reaction. The cells, which should not normally exceed ten per cubic millimeter, run from 30 to 100 and higher. The globulin content is estimated by the simple test tube reaction of Noguchi and is indicated by plus marks as in the Wassermann test. The Wassermann test in the cerebro-spinal fluid is done with .2 to .5 c.c. of fluid instead of the customary .1 c.c. of the blood serum. The cell, globulin and Wassermann findings do not run parallel either before or during the treatment. The globulin may be positive and the Wassermann negative or the Wassermann may be positive and the globulin negative. The cell count may bear like relations to the other findings. In the average case, however, the findings are positive though in different degree for all three tests. The blood and spinal Wassermans show considerable variation. We have found the blood positive with the spinal negative and vice versa the spinal positive and the blood negative.

As the treatment progresses, there is usually improvement

both in the clinical and serological findings, but these again are not parallel. The cell count declines more rapidly than the globulin and Wassermann reactions. The Wassermann test sometimes holds firm after marked clinical improvement. When it disappears altogether, the reaction has usually not been very strong before treatment. There may be a negative Wassermann before treatment which becomes positive under medication, the provocative reaction. This in turn disappears under successful treatment.

The results in paresis and tabes differ widely. It must frankly be admitted that the results in the former have been very disappointing. Though a few have improved symptomatically, the majority seems to have derived little benefit from the treatment. On the other hand, cases of tabes have been rendered entirely free of symptoms and, in some instances, of the spinal fluid findings of lues. Whether a permanent cure may be established is still an open question. Where the condition is approached early and the process is an active one, the prospect would seem to be fairly bright. But where the lesions are degenerative and of long duration symptomatic improvement is apparently all that can be hoped for. The psychic element in a new treatment and the remissions normal to the disease must not be overlooked. In such a chronic disease, it will take some time to decide what the real results may be.

I have employed the treatment in nine cases giving a total of fifty-one intraspinous and fifty-six intravenous injections. The method of Swift and Ellis was employed exclusively. In some cases there was considerable pain in the extremities following the intraspinous injection but this usually disappeared entirely over night. There were no serious ill-effects of any kind. Two cases were of paresis and the remaining seven tabes dorsalis.

The paretics showed practically no improvement whatever. One case received eight intravenous and intraspinous injections and the other three. The symptoms progressed in the usual way and the spinal fluids remained unchanged both showing strong positive Wassermann reaction.

Of the seven tabetics six showed more or less improvement symptomatically and serologically and one case showed improvement in the spinal fluid without distinct symptomatic improvement. The best result was obtained in a man receiving five intravenous and intraspinous treatments. This patient suf-

ferred excessive pain and was so markedly ataxic that he could only walk with a cane and the assistance of his wife. He is now able to walk miles without any assistance, his pains are gone and he has gained about twenty pounds in weight. His Wassermann, however, is still positive in both blood and spinal fluid and such a case should receive further treatment in spite of the symptomatic improvement. Another case with very strong positive Wassermanns in both blood and spinal fluid is now, after twelve intravenous and seven intraspinous treatments, beginning to show a decline in the strength of the Wassermann reaction. Another patient has obtained a negative Wassermann and symptomatic improvement after eight injections but still complains of urinary incontinence. Two of the cases gained decidedly in weight. Several of them noted a distinct improvement in the mental condition.

Considering this merely a preliminary report, I should say we had every reason to be encouraged and reviewing the reports of all observers it seems to me in these previously practically hopeless diseases, we have every indication to give this method and its modifications thorough trial and careful study.

I wish to express my thanks to Drs. W. D. Bayley, W. L. Hicks, and others who have kindly interested themselves in sending me cases for treatment.

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CIRRHOSIS OF THE STOMACH.

BY

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WE are apparently unable to satisfactorily and correctly name the disease referred to in this contribution, probably because there is considerable uncertainty and diversity of opinion as to its pathology. It has twenty-one synonyms, according to an article by Lyle (*Annals of Surgery*, November, 1911). Among these names we find the following: chronic interstitial gastritis, sclerosis of the stomach, hypertrophic stenosing gastritis, plastic linitis and cirrhosis of the stomach. I have selected these from the list contained in Lyle's article, believing them to best fit the ensemble of characteristic pathological findings enumerated in text book descriptions, as well as in the personal cases which I am about to present. Cirrhosis of the stomach is, to my mind, the preferred title. Lyle's article, just referred to, is entitled, "Linitis Plastica."

From the early part of the nineteenth century, when the disease was reported more frequently than before, and the descriptions were more complete, until the present day, differences of opinion concerning the pathology have existed. Some have considered the disease to be malignant,—a scirrhus, or a "fibroid cancer," an "epithelioma," an "endothelioma," or a "diffuse cancer of the stomach," while the majority of observers among the German, Italian, French, English and American authorities have maintained that it is benign. Others regard some cases as malignant, and some as innocent.

The stomach may not be altered in size, or, it may be dilated or contracted. Usually it is contracted, its walls are rigid and greatly thickened, and its external surface presents an intricate network of interlacing fibrous bands, giving it a scarred appearance. In this respect the cirrhotic stomach wall closely resembles the "leather-bottle" wall of diffuse gastric carcinoma. By reason of the marked thickening and rigidity of the gastric wall peristalsis of the organ is lessened and its lumen is reduced.

According to Lyle, who quotes Brinton, all of the layers of the stomach are involved in advanced cases, but the mucosa is

affected the least, and often remains normal in appearance. Microscopically it may present the appearance of chronic gastritis; in aggravated cases it is subjected to pressure and distortion by the infiltrating connective tissue and sclerotic bands in the submucous, subserous and serous coats.

The most pronounced lesion is a "diffuse hypertrophy of the connective tissue elements of the submucosa," although the bundles of connective tissue traverse the outer layers of the stomach in irregular bands, surrounding the blood vessels and interlacing with one another. The blood vessels may show signs of endarteritis. The resemblance which this tangled interlacement of fibres bears to the weave of sail-cloth suggested to Brinton's mind the term "linitis." The epithelial cells found in the submucosa and muscularis have been the cause of the differences of opinion concerning the nature of the disease. The majority of observers regard these nests of cells to be evidence of malignancy; others believe that they spring from the endothelium lining the normal lymph spaces. Even then they might be an evidence of malignancy; they would at least be a new growth. In the pathological report which I will presently submit, there were no cells, but the disease was malignant, clinically.

Cirrhosis of the stomach is a disease of adult life, occurring at any age from 20 to 80, most cases appearing between 40 and 60. It is commoner among men than among women; some cases give a history of arterial or cardiac trouble, others of alcohol; syphilis does not figure in the list of predisposing causes.

The symptoms of cirrhosis are sometimes few and uncertain, and many errors in diagnosis have been made in subjects attacked by it, or the disease has been overlooked and was discovered after death. For a long time indefinite symptoms of dyspepsia exist, then come persistent evidence of epigastric distress, loss of weight, vomiting, weakness, anemia and death. In other words the picture is one of chronic gastric irritation, supplemented, in the majority of cases, by the development of a firm tumor in the epigastrium, extending toward or even under the left costal border. This tumor is more or less tender to pressure and is somewhat elongated transversely.

Examination of the stomach contents may show the gastric secretions to be unaltered, or lactic acid may be present; free hydrochloric acid is usually decreased or absent. A correct

clinical diagnosis is very difficult, especially a differentiation between cirrhosis and scirrhus carcinoma, and because this is usually impossible, surgical exploration and treatment are not only advisable, but necessary for diagnosis and constitute the essential treatment of the disease. Probably careful dieting and lavage will have been tried before the case is presented for the advice and opinion of the surgeon. Unquestionably the duty of the latter (in fact the only thing for him to do), is to advise an exploratory section, with the view of performing gastro-jejunoscopy, gastrectomy, or jejunostomy according to circumstances governing the case and conditions found at the time of operation.

Gastrectomy is, for obvious reasons, the operation of choice, provided the technical difficulties are not too great. Of course some anastomosing procedure must constitute a part of the operative work, and this is apt to be more than ordinarily difficult, because of the difference in thickness and texture of the cirrhotic gastric wall on the one hand and the normal duodenum or jejunum on the other.

Case 1. Mr. T., age 60, has had indigestion for several years; must take Pluto water for constipation; has epigastric pain frequently and considerable flatulency; must eat cautiously; has lost weight from 200 pounds to 155 pounds. His heart is normal but rather rapid; his liver is small; examination of the urine was negative. There is a growth in the epigastrium, transversely elongated, firm, fairly smooth, but slightly nodular.

This patient had been slowly failing in health for two years. More than a year ago he consulted Dr. Lewis Brinton, Philadelphia, who also discovered a transverse mass in the epigastrium. An analysis of the stomach contents at this time showed lessened acidity and no free hydrochloric acid. An X-ray examination was made without disclosing any irregularity of the gastric outline or contraction of the stomach lumen. By eating cautiously and living on fruits, oatmeal, beef broth, light vegetables, chicken and lamb chops, this patient maintained a fair degree of health and comfort. He drank occasionally, usually whiskey,—in fact I know that he had been a “high liver” and was very fond of treating his friends to good things to eat and to drink. There was no history of syphilis.

His abdomen was scaphoid in appearance and to the left of

and just above the umbilicus a firm, slightly tender, transversely elongated mass, or ridge, could be felt. This was freely movable. The man looked somewhat emaciated and rather pale, but he was not cachectic in the slightest degree. I suggested an analysis of his stomach contents but he demurred so strenuously that I told him that I did not consider it imperative, as an operation had been agreed upon, but I would like an X-ray examination under a bismuth meal. This



FIG. I. ANTERIOR VIEW OF RESECTED STOMACH SHOWING CHARACTERISTIC INTERLACING BANDS ON SURFACE.

he consented to after some hesitation and the X-ray negatives showed a stomach normal in position and outline, but with a somewhat diminished lumen. I was disappointed in the X-ray findings: certainly the X-ray examination did not even help to explain the positive, palpable ridge which existed in the epigastrium.

My tentative diagnosis was a benign growth of the stomach involving the greater curvature and body, or a benign growth in the gastro-colic omentum. I was persuaded that it must be innocent in character: I could see no earmarks of malignancy.

Operation. An incision through the left rectus muscle exposed a stomach involved from end to end with typical, plastic inflammation, much more extensive and pronounced, however, in the right half of the organ. There were no adhesions. At the pylorus the thickening was annular and presented the appearance of a thick, fibrous ring, raised above the level of the surrounding gastric wall. The greater and lesser omenta were both emaciated and appeared veil-like and contracted, as if drawn in toward their respective curvature. The anterior



FIG. II. TRANSVERSE SECTION OF STOMACH SHOWING ENORMOUSLY THICKENED WALL WITH REDUCED LUMEN.

surface of the stomach (Fig. 1) presented a wall covered with fine ridges, or interlacing bands of fibrous tissue running for the most part parallel with the long axis of the stomach, and involving its distal two-thirds and entire circumference. The whole organ looked pale and was rigid and stiff, because of the pronounced fibrous thickening of its walls. (Fig. 2). There were no lymphatic metastases; I looked exhaustively for them.

My operative work consisted of a gastrectomy of at least two-thirds of the stomach (a subtotal gastrectomy), leaving a part of the cardia and fundus, about as large as the palm

of the hand. I endeavored to make my resection beyond the line of disease, but I found that even the fundus was moderately involved in the cirrhotic process. After closing the stump of the duodenum on the right and the cavity of the remaining portion of the stomach on the left, I performed a posterior gastro-jejunostomy.

The parietal operation wound healed perfectly, and the patient, seven weeks after the operation, was on full diet, had gained in weight and was out of bed practically all day long. He was free from all his old symptoms, except a moderate degree of flatulency; he said that before his operation his food had no taste to it, but that since the operation everything tasted natural.

The pathological examination of this stomach was made by Dr. S. W. Sappington: his report is interesting. "The specimen (fixed in formalin) is a hard compact cone of white tissue, measuring $10 \times 7 \times 4$ cm. The small end includes the pyloric orifice. The large end exhibits a wall 1 to 2 cm. in thickness and a lumen of 1.5 cm. A section through the middle of the mass shows a wall 1.5 to 2 cm. and a lumen of 1 cm. One centimeter from the pylorus, the wall is still 1.5 to 2 cm., but the lumen only measures .5 cm. From here the lumen funnels down to the pyloric end of the specimen, where it measures but one millimeter. The diameters of the entire mass at the pyloric end are 5×4 cm.

"Observation of the sectioned portions shows that the immense hyperplasia is distributed through all the coats, maintaining practically normal relations of thickness. The mucosa, submucosa and muscular walls are especially well seen in stained specimens, the maximum measurements of the different coats being 1 cm. for the mucosa, .5 cm. for the submucosa and .6 cm. for the muscular walls. On the serous coat were seen a few tubercles, 1 to 2 mm. in diameter.

"Microscopically there was first noted extreme hyperplasia of the muscular coats. The submucosa presented a hyperplastic fibrosis. The mucosa was also hyperplastic as regards stroma, but most of it had secondarily undergone mucoid degeneration. Of the remaining cells, endothelium and especially eosinophiles were strongly in evidence. The lining epithelium in spots had disappeared but was often well preserved. Many of the glands were gone and there was no increase of these at all. Nothing seen in the various sections convinced

us that carcinoma or sarcoma was present. There was certainly no submucosal or muscular infiltration of new cells."

The operation described above was performed on October 3, 1911, and Mr. T. remained in good health and gained in weight for one year. He then began to fail again and in January, 1913, reported for examination. I found an epigastric tumor, a moderate amount of ascites and a man of large frame reduced in weight to 129 pounds. He complained of vomiting every two or three days, the vomitus consisting of imperfectly digested food, which had been eaten 48 to 72 hours previously. He had frequent belching; he said that he ate because he was weak, and not because he was hungry, but his food did him no good.

I persuaded this patient to submit to an operation so that he could be fed, and I accordingly did a jejunostomy, short-circuiting the jejunal loop with a decalcified bone button. He recovered nicely from this procedure, but did not like the new method of feeding because he could not taste his food. He insisted upon eating by mouth, only to vomit the food in a day or so. Of course he failed in strength, became reduced in flesh to a living skeleton, and died, three months after the jejunostomy.

Case 2. Miss M. A. W., age 26. Has been ailing and complaining of indigestion for one year. Recently has lost weight. No vomiting. Examination shows a firm, irregular mass, transversely elongated, in the upper abdomen, extending to the left of the median line. Gastric analysis showed the stomach to be normal in secretion and motility. Because of the presence of this transversely elongated epigastric tumor, the absence of signs of malignant disease, and my experience six months before with the case just narrated, I made a tentative diagnosis of gastric cirrhosis.

Operation, under spinal anesthesia. Upon opening this girl's abdomen I found a stomach whose wall was thickened from the pylorus toward the fundus, for about one-half the length of the body of the stomach (four inches), while the left half of the organ presented a normal appearance. The diseased gastric surface was rough and irregular, because of the presence of interlacing bands which looked like large bundles of pale fibers, or scar tissue. My findings corroborated my suspicions and my diagnosis therefore was cirrhosis of the stom-

ach. I decided against partial gastrectomy so I performed a posterior gastro-jejunostomy.

Seven months later this patient was very thin and vomited everything. There was a large, prominent, hard mass in the abdomen on a level with the umbilicus.

Second operation. This was performed eight months after the first one, and now I found that the thickening and hardening of the stomach involved the entire organ and the lower end of the esophagus, as well. My previous anastomosis was drawn up into a hard, round, knot-like lump and there was nothing to be done but to close the abdomen. This patient lived for two months longer.

I have endeavored to present this subject and report my two cases as tersely and pointedly as possible, believing that the pathology is so wrapped up in uncertainty as to cause and in obscurity as to real character, while the literature is so barren of acceptable information on the disease, that all visionary theories are out of order under existing circumstances. The main facts relating to symptoms, diagnosis and treatment I have endeavored to emphasize.

Lyle's conclusions sum up this subject in a nutshell:

1. Diffuse fibrosis of the stomach occurs with or without cancer.

2. A large number of cases reported are clinically cancer, and have no claim to be termed linitis plastica. On the other hand some of the cases reported as linitis plastica are scirrhus cancers.

3. The clinical diagnosis is rarely possible and at the best is always problematical. The microscopic diagnosis necessitates a careful and prolonged search for nests of cancer cells in order to exclude scirrhus.

4. There is a possibility that the condition may be a pre-cancerous state, bearing somewhat the same relation to scirrhus cancer that gastric ulcer bears to gastric carcinoma.

5. The treatment is surgical.

INDICATIONS FOR THE ACUTE MASTOID OPERATION.

BY

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(Read before the Germantown Medical Society, February 15, 1915).

THE subject I bring to you this evening is apropos of the season; and should be of special interest to those of you whose calling takes you into the field of general medicine; in other words, the general practitioner; and it was particularly with his advantage in mind that the author has endeavored to construct this paper along lines that will give him an opportunity to take with him a number of "ready for use" hints on the Indications for the Acute Mastoid Operation, or Mastoidotomy.

If, in conjunction with or following closely upon an earache, the patient calls attention to symptoms, or they be elicited, in the bony region immediately behind the auricle, there is at once considerable alarm (as there should be) felt by the family and in many instances the attending physician. At this time a few cardinal points recalled by the latter concerning acute mastoiditis, will have the effect of oil upon troubled waters.

As an aid to firmly clinch these facts, there is nothing more important than some knowledge of the anatomy and pathology of the parts, which we will briefly review.

The mastoid of the new born presents itself as a small tubercle, and does not assume its adult form until the third year of life (Zuckerkanndl) after which time it forms the posterior part of the middle ear and extends downward behind the external auditory canal.

The mastoid antrum which communicates with the middle ear is the only pneumatic space in the temporal bone of the new born, but during development other cavities or cells form around it to make up the internal structure, which is enclosed by a hard inner and outer cortical plate, together constituting the mastoid process.

We differentiate three types of mastoid bone by their internal structure, as follows: the pneumatic, diploetic and sclerotic. The importance of this classification will be understood better as their association with inflammatory process is demonstrated.

I. The Pneumatic form. Its internal structure is divided

into pneumatic spaces or cells by delicate bony septa, these cavities communicate with the mastoid antrum, and each cavity is lined with a delicate membrane which is a continuation of the mucous membrane of the middle ear. It is closely united to the periosteum and has a layer of nonciliated squamous-epithelium. This type of mastoid by its formation is the most susceptible to infection or extension of inflammatory processes.

2. The Diplœtic mastoid process is quite differently constructed inside, being entirely made up of small celled diplœ and fatty osseous tissue with occasionally air cells present in the vicinity of a small antrum. This form, though subject to the same pathological changes as the pneumatic type is less susceptible to inflammation, consequently less frequently involved.

3. The Sclerotic type is almost ivory like in consistency through its entire thickness, there being no pneumatic cells and the diplœ are very minute in size, or there may be but one large cell in its tip. This type is most resistant to inflammation and disease, hence the least frequently found involved.

There is one other, the mixed form; a combination of the pneumatic and diplœtic types that must be mentioned specially, inasmuch as it constitutes nearly one-half of the diseased mastoid processes, here the lower two-thirds are nearly always composed of diplœ while in the upper portion around the antrum will be found pneumatic cells.

When the cells are invaded there is first a hyperemia followed by edema of the muco-periosteal lining which soon breaks down, forming small abscesses or filling the cells with pus. Later the delicate bony partitions between the cells break down and there is formed a confluent abscess of the entire mastoid process.

Then too there may be pus in the cells which did not come from the cell tissues, for Politzer observed that there is pus in the mastoid cells in every suppurating middle ear. Hence its presence does not mean a mastoid abscess in every instance.

Favoring abscess formation is the small caliber of the openings of the cells into the mastoid antrum, which are only large enough to admit a bristle. The slightest thickening of the mucous membrane will occlude these openings and dam back the secretion.

After about one week's duration some of the pus in the cells may be resorbed and granulations formed, usually un-

healthy, which partly or completely fill the cells or abscess cavity. Or, necrosis of the cortex may occur involving the entire tip of the process, or it may burrow through the internal cortical plate causing a fistula resulting in an extra-dural abscess or a peri-sinus abscess around the lateral sinus, again, a fistula may occur in the outer cortical plate resulting in a sub-periosteal abscess, etc. This takes place rapidly in young children where the squamo-mastoid suture is not closed, and, in some adults where this suture has never become entirely closed.

Since the naso-pharynx is the source of most mastoiditis let us trace the infection from its presence in the pharynx, as it enters the pharyngeal orifice of the eustachian tube, through the tube into the middle ear or tympanum, extending from this cavity to the antrum, and finally spreading to the pneumatic cells through the tiny openings previously described.

The etiological factors in mastoid disease are: catching cold, exposure to cold and wet, injection of large quantities of fluids into the middle ear, adenoids, diseased tonsils, and general and infectious diseases, especially influenza, scarlet fever, diphtheria and measles.

There are two forms of acute mastoid involvement in which we are particularly interested at this time, for instance:

(a) In cases of acute otitis media that run their course without perforation of the drum membrane, symptoms of irritation in the mastoid process often arise which frequently subside spontaneously after suitable treatment.

(b) In acute purulent middle ear affections symptoms of inflammation of the mastoid are more severe and more often before than after perforation of the drum membrane, these reactive symptoms may disappear after appropriate treatment or spontaneously after repeated remissions and exacerbations, principally in primary acute middle ear suppurations, however, mastoiditis and abscess formation in the mastoid process is much more frequent in the suppurative middle ear inflammation of influenza and other infectious diseases, as scarlet fever, measles, diphtheria, etc., and is of special interest because of the complications following such an abscess formation, or mastoid invasion.

In order to conveniently consider the indications that lead to an acute mastoid operation let us divide them into symptoms and signs.

(a) Among the symptoms the earliest to appear is a pain in the ear, followed by an increase in temperature 100 to 103°. There is soon associated with the pain in the ear, a pain in the mastoid process, both are constant or intermittent. There is impairment of hearing, evening exacerbations, sleeplessness, nervous excitement and the patient has a pale sallow appearance.

(b) Signs on the mastoid:

1. A marked increase in temperature on the mastoid as compared with the other side.
2. Inflammatory infiltration and reddening of the skin over the mastoid.
3. A slight rigidity of the skin which can only be recognized by comparison with the other side.
4. Tenderness to pressure on the mastoid region, especially over the antrum at the tip and along the posterior border.
5. There is a change in the position of the auricle due to increased infiltration and swelling which pushes the upper portion of the ear out and down, away from the head, and the post-auricular fold is lost.
6. The patient holds his head to the affected side.

There occurs swelling on the mastoid region from several other sources which must be excluded in deciding upon an acute mastoid abscess as they are quite similar at times.

- (a) Furunculosis of the external auditory canal.
- (b) Erysipelas of the ear.
- (c) Pediculosis capitis with lymphangitis of the scalp.
- (d) The use of drugs placed in the external canal as an analgesic (capsicum).

(c) Signs on the ear.

1. The drum membrane will be found bulging forward and pulsating. At times a deep red color and others a dull gray (ground glass) appearance. If perforation has ensued it may be at any point or of any shape, though it is often found as a round or nipple like projection (influenza) in the posterior superior quadrant.

2. Bulging of the posterior superior wall of the meatus with narrowing of the lumen of the auditory canal is a sign to which must be attached great importance.

3. A profuse muco-purulent or pus discharge from the mid-

dle ear may cease, while the inflammation in the mastoid may keep right on uninterruptedly leading to abscess formation.

The symptoms of acute mastoiditis are attended by great irregularity. As to their presence and severity they range from the extreme to the mildest form. Again all are entirely absent, another characteristic is remission for several days, when suddenly severe symptoms again arise which necessitates the immediate opening of the mastoid process, on the other hand it may run along for months without any annoying symptoms when there will occur a sudden acute exacerbation.

When do we operate? Immediately, if in a few days conservative methods fail to control the inflammatory process. When there is a remission of several days with an acute exacerbation, or if exacerbations of evening fever do not cease, or when there is a nipple like perforation in the drum membrane, particularly in the posterior superior quadrant, and an otorrhœa indicative of abscess formation has lasted eight or ten days, or when symptoms of labyrinth or meningeal irritation appear, (vomiting, dizziness, nystagmus and disturbance of equilibrium).

Why do we operate early? Because of the element of safety that it entails. To prevent extensive destruction of tissue (cellular or bone) and to encourage rapid healing, to preclude a sudden fatal termination by intracranial complications such as extradural abscess, pachymeningitis interna, leptomenigitis, brain abscess and sinus thrombosis.

What do we operate? An opening is made into the mastoid process to the antrum, for the purpose of draining it and the middle ear cavity, the extent to which the operation is carried varies from a fair sized opening in the mastoid to the removal of the entire external plate and internal structures, including the tip. The rule is, clean out as long as you find diseased tissue. This includes unhealthy tissue around the mastoid, unhealthy granulations and pus in the cells, soft necrosed bone, sequestra, etc.

To recapitulate. It has been stated above that the symptoms and signs of acute otitis media and acute mastoid abscess are exceedingly irregular, whether it be an acute abscess associated with acute suppurative otitis media or whether the abscess appears long after the middle ear condition has healed.

Of the more important reasons for immediate operation evening exacerbations, recrudescence following a few days

after the initial attack has subsided, tenderness of the mastoid on pressure, swelling in the mastoid region and bulging of the posterior superior wall of the external auditory canal are prominent.

One should try for more than one symptom; however, if the writer had but one or two indications for operation to choose from, he would consider bulging of the posterior superior wall of the canal, or continued tenderness to palpation on the mastoid most dependable.

MALNUTRITION: ITS CAUSES AND RESULTANT CONDITIONS AND TREATMENT.

BY

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MALNUTRITION is disturbed metabolism dependent upon the improper balance of the food. Individuals differ as much in their idiosyncrasy regarding food as they do in regard to drugs. The old saying of what is one man's meat is another man's poison is plainly shown in these instances. One child will thrive on a high proteid and low fats and carbohydrate diet, and the same diet given to another child will cause diarrhœa, vomiting and steady loss of weight that will eventually run into some of the chronic diseases that are the result of this disturbance of the balance of the food that suits each particular case. Other names given are marasmus, infantile atrophy, athrepsia infantum. This condition is not caused by any inherent disease. When digestive functions are impaired and food is not assimilated wasting follows. What are the causes of this condition? I should say:

- 1st.—Improper food—(a) Overfeeding (too much food).
(b) Underfeeding (lack of nutriment).
- 2d.—Bad Hygiene.
- 3d.—Too frequent feeding—(improper quantity).
- 4th.—Congenital defects—(hairlip and adenoids).
- 5th.—Inherited disease or predispositions.

6th.—Improper development—(premature birth and its consequent subnormal digestive powers).

7th.—Sequela to acute infections—(diseases with subsequent paralysis affecting proper digestive functions).

In taking up the symptoms the first one that comes to our notice is that the child does not increase in weight; hence the importance of weighing the child at regular intervals, at the end of the first month should never be neglected. The child should be weighed at least once a week. The weight should increase $\frac{1}{3}$ by the end of the first month and should be doubled at the end of the 5th month and at the twelfth month should be three times its weight at birth. Weaning, of course, and dentition which take place later in life are also two of the causes for non-increase in weight. If we have not the increase in weight as named or at least an appreciable one we can be sure that our food is wrong. Some authors claim it is lack of proteid. Others say that it is carbohydrates and others fats but, we do know that the balance is wrong and we must examine the milk and experiment until we get a food that agrees with the child.

The bowel movement will often be a good guide to follow, that is as to color and consistency. We could here go into the different color stools that are caused by a vegetable diet or carbohydrates making them green looking, or proteid making them dark, or fats making them of flocculent, consistency, or whitish in color. Whether you need proteid, fats or carbohydrates the main thing is to find out and supply the needed material. If the child is taken from a poor breast milk, which is often the cause of this condition, and placed on a formula that agrees, the child will start to gain at once and, on the other hand, changing from a formula to a breast milk has also worked wonders, although the breast food of the foster mother should be carefully selected to conform with the age of the child. In both cases a chemical analysis of the breast food should be made before the change is attempted. One of the main symptoms in these children is cachexia. It is always marked and keeps pace with the progressive emaciation. Oftentimes these conditions start with vomiting or diarrhoea which becomes chronic, colic and flatulence appear and then a reacting constipation may supervene and you have a resultant gastro-intestinal catarrh. If you neglect these symptoms a condition is likely to develop, called by some

athrepsia. The infant commences to waste and unless we realize the condition and give the proper treatment the child will die of exhaustion and inanition. When these cases linger we have rickets and scurvy, which I shall take up later. Recovery without treatment is impossible. Parrott divides this condition into three classes. In the first class we have the following symptoms: diarrhœa with curdy stools usually green in color and containing mucous in large quantities, flatulence with distended abdomen that remains constantly in this condition, coated tongue with stomatitis which combination gives you a restless, whining, sleepless infant. The tissues become flabby and the child begins to waste. In the second class the above symptoms are intensified and the wasting becomes more apparent, stools more frequent and more undigested. The stools get pale and putty colored and have a characteristic peculiar odor. Again they may be dark from the presence of altered bile. The child becomes voracious, and liquid food does not seem to satisfy it and kind friends may give it soft diet which only adds fuel to the fire. The restlessness and sleeplessness become more marked; the stomatitis gets worse, the skin becomes harsh and dry, small boils make their appearance all over the body and head; or a lichenous rash makes its appearance; the buttocks and genitals become raw and excoriated; the temperature subnormal; the feet and hands congested while the face has a pallid earthy tint and a sickly lactic acid smell is given from the body, especially the abdomen. The wasting progresses, the skin wrinkles and hangs in folds about the arms and thighs.

The third stage. This brings the child into a moribund state. It now becomes too feeble to cry and becomes heavy and drowsy and takes little notice of anything. Death then usually ensues preceded by muscular twitching, strabismus or general convulsions. The course of this condition depends entirely on the amount of nutrition that can be assimilated. The worst form of marasmic children will frequently gain in weight when the proper food is given. Don't forget the advantage of a change of air or plenty of fresh air and sunshine where a child cannot be sent to the seashore or take a trip on the ocean. Take them to the local Park or roof top of dwelling. On proper food, fresh air and hygiene depends the outcome. As in all other ailments the first step is to remove the cause. Improper air, crowded apartments, and

improper diet, are the three main causes of this condition. Here also is where the Homœopath shines, for old school authorities state that medication amounts to nothing. "There's a reason," of course: the little stomach and depleted digestive apparatus cannot stand the various mixtures. But the indicated remedy here is the oasis in the desert and has worked the wonders extolled for it. We think of such remedies as sulphur, cal carb. cal phos, and other tissue remedies of course that our elder colleagues have never studied, and we cannot hold any man responsible for what he does not know. But is ignorance of the great law of cures a good excuse? I will leave this to your judgment. Feeding, however, is a paramount factor and we must give the blandest and least irritating food possible. Frequent weighing should be carried on.

In the hospital at which I have the pleasure of attending the children, I have them weighed every twenty-four hours to ascertain the progress being made. Milk must at times be entirely discontinued or else use whey, cutting out the curd and supplying the constituents of the curd in some other more easily digested form. I usually use six to eight ounces of whey to which the yolk of a raw egg has been added. This is one of the many adjuvants, as is also concentrated chicken soup thickened with sago, farina or barley. I oftentimes alternate four to six ounces of this with the whey mixture. If emaciation is marked the three hour feedings are preferable, so as to give the food time to be assimilated. The value of vegetable soup such as pea, bean, and lentil should not be forgotten as they all have high proteid values. Flour ball added to four ounces of chicken soup or steak juice, or roast beef juice, will be found very well as will also beef blood, two to six ounces daily. As soon as the child improves in respect to diarrhœa, milk in some form may be allowed, peptonized or modified with a food such as Mellon's or Eskay's. I have also found Horlick's Malted milk of use under these conditions. Where a nurse is possible in hospital or private work, albumen water given in teaspoon doses every half hour will oftentimes have a very satisfactory effect. If the stomach rejects the food rectal feeding may be resorted to; saline solutions will also stimulate the child if slowly injected and should be highly stimulating and beneficial if they possibly can be used. However rectal conditions sometimes preclude the use of this remedy. In these cases if the stomach

will tolerate cod liver oil, use it, but it will not often stand for it. Inunctions over the entire body every morning however is of great service at times. A great many men use Keller's Malt Soup. Have used it in ten cases myself, one with excellent results. Keller's Soup consists of:

Wheat Flour 2 oz.

Milk 11 oz.

Soak the flour and milk and rub through a sieve or strainer. Take as a second mixture:

Water 20 oz.

Malt Extract 3 oz.

Bicarbonate Potassium $2\frac{1}{2}$ drams.

Dissolve the first two of the second part at 120° F. before adding the potassium bicarbonate. Mix these two solutions and boil. This will give you the following formula:

Albuminoid 2 %

Fat 1.2 %

Carbohydrates 12.1 %

Vegetable Proteid 9 %

The wheat flour is added to this mixture to overcome the diarrhoeic tendency of the malt and the alkali to overcome the acid generated in these sick children. This alkali is a most important thing, and is one of my reasons for suggesting the whey mixture, which is usually very abundant in salts. Fats are very desirable at times especially when you have constipation with this condition which is usually found in the second classification of Parrott. I have also found where constipation was present, the milk and cream mixture with Mellon's Food, starting with a low caloric value and gradually increasing, has been of great benefit to these cases. I have been using this in the West Jersey Hospital in Camden for the last six months and the results have been very gratifying. Now, as a result of the condition given above we frequently have a condition commonly called scurvy or Barlow's Disease. We often hear this condition spoken of but in my short experience of eleven years I have only seen one bad case and that was a very bad one. The causes of this disease are varied but are similar to the condition noted above. Some people say that depriving the child of breast milk, prolonged sterilization of milk, the use of condensed milk and proprietary foods exclusively, are responsible. Some of our eminent physicians think scurvy is caused by a ptomain in the diet. Of these

Jackson and Vaughn Harley of London, are of the same opinion but one thing we are sure of that this disease is caused by the absence of some essential element in the diet—that the equilibrium is unbalanced. There may be a scorbutic factor present, for by altering the diet we can cure the condition. Any child or person fed for a long time on any excessive proteid, carbohydrate or fat diet will develop scurvy but if you furnish the lacking element the condition will be overcome.

Take a child that has been on an exclusive milk diet (lacking in some of its important elements) and he develops this condition: if you add beef juice or potato gruel, proteid or carbohydrates, supplying the missing element that the particular case needs, you overcome the condition. On the other hand, if you have had a case resulting from a condensed milk diet you add cream and albumen water, fat and proteid, the condition will again be overcome, which proves conclusively in my estimation that it is due to the absence of an essential element in the diet, or what we may call for a better name the anti-scorbutic element. These cases when you meet them are often alarming. I remember well the scare I had on seeing my first case. It was a typical case as read in the books. This child had bluish black petechial spots all over the body and oedema of the legs and forearms. The eyes were pushed forward as you find them in exophthalmic goitre and the child lay as if paralyzed, with a temperature of 104° . All of the inner surface of the mouth was covered with macula as found on the skin, and the pulse was feeble. There was also a hematuria present and I imagined I had a case of yellow fever or some other dread disease until I arrived home and began to dig and found that all these alarming symptoms were due to improper diet and in a home of one of my best summer patients. These people had sterilized milk that cost eighteen cents a quart but the process had undoubtedly caused one of the essential factors namely the albumoids to be destroyed or made unassimilible. Here is an argument for raw milk that is clean and milked under strict sanitary dairy precautions, and shows that we should attend to the source instead of depending upon sterilization to carry us through. I am glad to say that in our modern dairies today this is the trend, and we should look to see less and less of these malnutrition cases. I have seen similar cases in children who have had

summer diarrhoea and were placed on oat meal or barley water without supplying the albumen and proteids that were necessary to make up the equal balance. The same is true of proprietary foods or even cream mixtures that are not equally balanced with proteids. Thus we find that scurvy is starvation due to deficiency of one or more of the essential nutritive elements in the food. One of the beacon lights that warn you from the shoals of this disease is the sudden stoppage of walking or creeping in a child who has walked or crept. You may think you have rheumatism, it cries when picked up or is touched. Look to the diet at once as these symptoms will develop long before your alarming symptoms come of emaciation and refusal to eat.

While rickets and scurvy are both due to disturbance of metabolism founded upon dietetic errors in which the live factors of the food have been neglected—yet the symptoms differ materially. In scurvy you have no rachitic rosary, no hemorrhages or spongy gums, no pendulous belly or the rachitic square head frequently seen in the other disease. The absence of physical signs and thoracic involvements will preclude tuberculosis.

Cases of scurvy should not be considered hopeless as long as any vitality remains. If results do not materialize at once stick, be persistent and patient, and in a few months under the proper feeding your labors will be rewarded with wonderful changes. Cases have been known to recover when hardly any muscle was left, almost all the fat gone and the elasticity of the skin lost. What treatment would you suggest in such a case? Eliminate the scorbutic element by proper food. This consists of fresh milk, fine potato gruel, this is made by rubbing a thoroughly steamed mealy potato through a fine sieve and then beating it up with milk until smooth and of the consistency of thin cream. One teaspoonful is added to each bottle and gradually increased to a dessert spoonful if found to agree. Sometimes when this won't agree well boiled carrots treated in the same manner will agree. Fresh milk alone will not suffice and you will find that you will have to add raw meat juice and vegetable juices, such as orange, or grape juice, grape fruit or the potato or carrot gruel. Fresh air is paramount and next in importance to the diet. Fresh air and sunlight, the agents we are using more and more every day play an important part in all results for malnutrition of what-

ever source or condition. Sunlight is one of your most important remedies. Keep your child in the sun as much as possible during the day. A warm salt bath with sea water from three to five minutes and then rub until the skin is pink and place the patient in bed and you will find that the child will be soothed greatly and will sleep soundly.

Drugs, carbo veg. and the Calcareas. also or malt extracts, cod liver oil, and in some cases small doses of iron are found very useful. Another condition, and the last that I shall take up is Rickets. Rickets affects mainly the bones and the nervous system, but we also find manifestation in ligaments, mucous membrane and muscles. What are the causes of this condition? They are similar to the others and are caused by underfeeding which will almost cover all of these cases but we must add to this the absence of fresh air and sunshine. You usually find these cases like scurvy due to improper bottle feeding, but a mother with a devitalized body due to tuberculosis, malaria or any organic lesion will give you an underfed and rachitic child. Prolonged nursing has also caused this condition. As we all know, well toward the end of lactation the proteids are diminished and if we do *not* use a substitute in the form of albumen water and meat juices by hand feeding we will invariably have a rachitic child.

What are the symptoms? We have anemia, enlargement of the end of the bones, enlargement of the liver and spleen causing the typical pendulous belly and in some instances the glands in the groin and neck, that is the lymphatics. The bones are softened and we have as a result the typical bowed legs and craniotabes. The fontanelles are open and the parietal protuberances are enlarged giving us the characteristic square head. This condition may be mistaken for hydrocephalus and should be borne in mind as at first the bones are soft and do not harden until the condition improves. On the ribs we have the rachitic rosary or beaded ribs where the bones join the cartilage. Similar enlargements can be felt and seen at the wrist, ankles and knees. Delayed teething is also a prominent symptom. The spine as a rule will show a typical rachitic kyphosis not being able to stand the weight of the trunk without bending or curving. The first of the symptoms and the fore-runners of the others are constipation, head sweating, especially at night. Rolling the head on the pillow with occipital baldness. Tetanic seizures, muscular spasms and laryn-

gismal spasms are also early symptoms. Teeth are not only delayed but when they appear are irregular and carious. The head symptoms appear before those on the thorax, although in six months they both have appeared and the child has a marked depression on either side of the sternum and parallel with it and we have the so-called pigeon or funnel breast (chicken chest) also various orthopedic deformations. Walking is late and oftentimes paralysees have been diagnosed when we simply had an aggravated rachitic case. (Not always do we find rachitic children thin, sometimes they are fat, flabby and anemic, showing that the fat infant is not necessarily the healthy infant.) Lots of mucous is found in the stools and we may have sometimes diarrhœa instead of constipation. Pulse and temperature are normal.

Rachitic per se is rarely fatal but they leave the child sometimes crippled for life and under par and unable to combat the infectious and contagious diseases usual to childhood and these may prove fatal in rachitic children, especially those referring to the lungs as this leaves the chest impaired as to contour and size. Treatment: fresh air, sunshine and good food of the required quantity and quality. Examine the food, breast or formula and if proteid is low increase by feeding another or changing formula. Cereals: such as barley, rice, cream of wheat, sago, farina—if old enough. Spinach, asparagus, peas and beans, fresh fruit juices, butter and cream are also necessary. The bones are lacking in lime and we must try to supply the same. Phosphorous is an excellent remedy. Small quantities of glycena-phosphates, phosphate of lime and phosphorized cod liver oil are excellent remedies and may oftines be used to advantage.

RESECTION OF THE SHOULDER FOR OSTEOMYELITIS.

BY

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THE patient is a stenographer, aged 25 years, with a good family history.

He denies having had syphilis but had gonorrhœa two years ago.

About three years ago he fell from a bicycle, striking his

right shoulder and arm; the injury was followed by more or less pain and swelling of the arm and joint, which subsided under local treatment.

He did well until two years ago when he had an attack of typhoid fever which was soon followed by the reappearance of the pain in the shoulder joint, which was worse when the parts became warm, and more especially at night when the patient was in bed.

The pain, which was of a neuralgic and throbbing nature, became so intense that the patient was unable to sleep at night.

As the condition advanced there was a significant loss of power in the parts, with limitation of motion.

There was neither tumefaction, change in color nor local heat of the tissues about the joint.

The skiographic picture showed nothing.

His physician prescribed tonics, iodide of potash, massage and electricity with negative results.

Within the past three months there has been a marked restriction in motion. The patient is unable to place the hand on the opposite shoulder nor was he able to use the arm with any degree of satisfaction.

After careful consideration, the patient was advised for diagnostic purposes, to submit to an exploratory incision down to the periosteum and bone.

October 27th. The patient was operated at the Prospect Heights Hospital.

On exposing the head of the humerus the periosteum was found thickened and easily peeled off revealing necrotic bone extending downward to two inches below the lesser trochanter.

After resecting the bone a little below the area of necrotic tissue the medulla was found to be infiltrated with a greenish pus.

The inflammation seemed mainly confined to the marrow and a distinct central necrosis was present.

The extension of the suppuration into the shaft of the bone was limited by granulation tissue produced in the bone marrow.

The outer half of the glenoid cavity was found to be carious and was removed by the aid of Rougier forceps.

Through and through drainage completed the operation.

October 28th. The patient was much exhausted by the

operation, then rallied and afterward went on to rapid convalescence.

The drainage was kept up on account of the free mucopurulent discharge and the wound irrigated daily with permanganate of potash.

At the end of four weeks the cavities filled in and the dressings were dispensed with.

December 4th. Passive motion showed the arm to be free; he had some power in lifting it from his side, the fingers recovering their power, both of flexion and extension.

December 30th. Examination of the arm shows that it continues to gain in power and mobility. A certain amount of new bone has formed, and this at the proximal end had spread out and enlarged somewhat so as to form a head; it was in contact with the site of the glenoid cavity.

March 1st, 1915. Patient has complete control over the elbow. The hand movements are perfect, with a good firm grasp. He says the limb is as useful as that of the opposite side.

In a study of the physiology of the stomach showing the onset of hunger in infants after feeding, H. Ginsburg, B. S., I. Tumpowsky, B. S., and A. J. Carlson, Ph.D., Chicago, published their findings in *Jour. A. M. A.*, May 29, 1915. Fifty-five observations were made on thirty infants from 24 hours to 4 weeks old. From this study it would seem that the average young infant should be fed at least every 2½ to 3 hours. Two hours possibly being too often and four hours too long an interval. The summary of their findings is as follows:

The infant's stomach shows feeble tonus contractions of the fundal end, one hour after nursing. As the stomach discharges its contents these tonus undulations gradually increase in frequency and intensity until by the end of from two and a half to three hours these become transformed into vigorous hunger contractions. The time of onset of hunger contractions after the previous feeding varies for each infant. In our present series the minimum is two hours and the maximum three hours. The hunger contractions of the empty stomach are modified tonus waves of the fundus of the digesting stomach, as shown by Rogers and Hardt.

In the normal individual the presence of vigorous hunger contractions is probably a biologic evidence that the stomach is in proper condition to receive food. If this is the case, the stomach of a normal infant is ready to receive food from two to three hours after the previous nursing.

**EXAMINATION QUESTIONS—PENNSYLVANIA BOARD OF MEDICAL
EDUCATION AND LICENSURE—MEDICAL AND SURGICAL.**

FIRST SESSION, TUESDAY, JUNE 1, 1915—2 P. M.

PHYSIOLOGY, PATHOLOGY, BACTERIOLOGY.

1. Given a case of suspected anemia outline the laboratory tests for confirming the diagnosis.
2. Given a case where continuous fever is a prominent symptom outline the laboratory tests that would aid in clearing up the diagnosis.
3. In acute lobar pneumonia (croupous pneumonia) detail the local conditions, the determining cause of these conditions, and state briefly the effect on the normal functions of the lungs.
4. Describe the method pursued in the preparation of autogenous vaccines.
5. Describe the lesions, name the causes and outline the technique of a method of demonstrating ophthalmia neonatorum.
6. Describe the processes of the death of bone and the sequela of such conditions.
7. Name and describe two pathological lesions which may have as a symptom hematemesis. Outline the laboratory tests that would aid in differentiating the above lesions.
8. Differentiate by laboratory methods acute parenchymatous nephritis from chronic interstitial nephritis. Describe the lesion in each condition.
9. In chronic interstitial hepatitis detail the local condition and state briefly the effect on the normal functions of the liver and on digestion.
10. Outline the tests for diagnosing tuberculosis aside from physical examination.

SECOND SESSION, WEDNESDAY, JUNE 2, 1915—9 A. M.

SYMPTOMATOLOGY, DIAGNOSIS, TOXICOLOGY, MEDICAL
JURISPRUDENCE.

1. Enumerate the symptoms of diabetes insipidus and differentiate it from diabetes mellitus and chronic interstitial nephritis.

2. Enumerate the symptoms of pernicious anemia. By the blood picture differentiate it from malaria and from syphilis.
3. Enumerate the symptoms of gallstones and differentiate them from those of renal calculus.
4. Enumerate the symptoms and physical signs of aneurism of the thoracic aorta. (a), the ascending portion of the arch; (b), the transverse arch; (c), the descending portion.
5. Enumerate the symptoms of glaucoma and differentiate it from hemorrhage of the retina.
6. What is acute rheumatic fever? State in detail the symptoms diagnostic of the same.
7. Enumerate the physical signs and symptoms of acute plastic pericarditis and differentiate it from aortic murmur.
8. Enumerate the symptoms of perinephritic abscess.
9. Enumerate the symptoms and name antidotes in poisoning from (a), morphine; (b), strychnine; (c), atropine.
10. In a suspected case of criminal abortion how would you determine that pregnancy had existed?

THIRD SESSION, WEDNESDAY, JUNE 2, 1915—2 P. M.

OBSTETRICS AND GYNECOLOGY—PHYSIOLOGICAL, CHEMISTRY.

1. Name four abdominal enlargements which might be mistaken for pregnancy (after the seventh month) and in each case outline the differential points from advanced pregnancy.
2. Should a woman with a deformed pelvis (early in pregnancy) engage your services, by what various means might you aim to secure her a living child? In each instance (method) what may be the limits of measurements of the conjugate-*vera* (true conjugate)?
3. If a woman in labor should suddenly develop symptoms of collapse or shock, name three causes which might be responsible for the condition. How would you recognize the condition present and how would you manage the case in each instance? (Omit description of operations.)
4. How would you deduce the presence of EARLY uterine cancer? (a), of the cervix? (b), of the fundus? State the method of treatment you would adopt in each case and reason therefor. (Omit description of operations.)
5. If a woman consults you as to her future confinement and places herself under your care up to the time she falls

into labor, detail the steps you must take in order to secure her safety. (State in detail any tests that should be made.)

6. Give the differential diagnostic points between the following conditions: Pyosalpinx, extra-uterine pregnancy, retro-displacement of a non-gravid uterus; retained fecal contents of the rectum.

7. If a woman presents herself upon whom presumably a criminal abortion has been committed in the early months of pregnancy, how will you tell whether or not the uterus is empty? What two symptoms are of the most importance? Discuss the significance and remote possibilities of each. State the proper method of treatment in such a case.

8. Discuss the chemistry of respiration.

9. Name the principal enzymes of the gastro-intestinal tract and indicate the function of each.

10. Discuss proteins from the following standpoints: (a), occurrence; (b), importance; (c), composition.

FOURTH SESSION, THURSDAY, JUNE 3, 1915—9 A. M.

ANATOMY—SURGERY.

1. Give a general outline of the treatment of gun shot wounds of the abdomen.

2. In injuries to the abdomen, such as from pressure between car bumpers or heavy crane, describe the traumatisms that should be borne in mind. Outline the treatment of any one condition selected.

3. In supra-condyloid fracture of the femur: (a) What is the usual deformity? (b) What is the anatomical explanation of that deformity? (c) Outline the treatment.

4. In fracture of the surgical neck of the humerus: (a) What is the usual position of the fragments? (b) What is the anatomical explanation of the same? (c) Outline the treatment.

5. Describe the etiology of hare-lip. Outline a method for its cure.

6. What are the varieties of gastric ulcer? Without details, outline symptoms and conditions that would indicate the need of surgical intervention.

7. In inguinal hernia, what are the varieties, basing classification upon: (a) Mode of exit? (b) Degree of descent?

(c) Contents? (d) Congenital or acquired? Give a general outline of a method for radical cure.

8. In fractures of the skull what are the varieties? What are the indications for surgical intervention?

9. What is the usual position of the foot in Pott's fracture? What causes it? How should this injury be treated?

10. Describe and discuss the courses and varieties of the various bands and veils known under the general terms of "Lane's Kinks" and "Jackson's Membrane."

FIFTH SESSION, THURSDAY, JUNE 3, 1915—2 P. M.

PRACTICE AND MATERIA MEDICA AND THERAPEUTICS —
HYGIENE AND PREVENTIVE MEDICINE.

1. Outline the treatment of a case of tertian malarial fever in a child of ten years of age and in an adult. Give the reasons (indications) for the remedies used.

2. What means and measures would you adopt in efforts to destroy mosquitoes known as agents in malarial infection?

3. What dietetic instruction would you give preparatory to the treatment of a case of tapeworm? Name three remedies that might be used in such a case and their effect. Give dose of each.

4. Outline the hygienic, dietetic and medicinal treatment of a case of rickets.

5. Outline the therapeutic indications in the treatment of a case of acute gout. State the reasons for the employment of each drug.

6. Outline the local and internal treatment of erysipelas giving the reason for the employment of each agent used.

7. What measures and means would you adopt in the prevention of typhoid fever and explain the reasons for each?

8. Outline the treatment of a case of laryngeal diphtheria in a child of ten years of age and give indications for all remedies.

9. How would you manage a case of hay fever and give reasons for each remedy used.

10. Outline the treatment of epilepsy and give reasons for treatments recommended.

EDITORIAL

MEDICAL ORGANIZATION IN PENNSYLVANIA.

WITHIN the last few months articles urging a more thorough organization among the homœopathic physicians in the State of Pennsylvania, have appeared from time to time in the *HAHNEMANNIAN MONTHLY* and from the sentiments expressed in these articles, it is evident that the time is ripe for active steps to be taken in this matter. That more efficient organization is essential to the best interests of the homœopathic physicians of the State, is so obvious that we need spend no time in presenting arguments in its favor.

Our present organization, with a central State Society and various scattered local societies, has for many years served the purpose of the homœopathic profession very well and has accomplished magnificent work. Its weakness, however, consists chiefly in the fact that it is not in sufficiently close touch with local organizations and with local needs. Experience has shown that the County Society offers the only satisfactory basis for such organization work.

The problem now before the homœopathic profession consists in finding a method of perfecting the county organizations and of bringing these organizations in direct connection with the State Society. Our former president, Dr. Leon T. Ashcraft, realized the importance of this work and incorporated it in his presidential address at Galen Hall last September. Dr. B. F. Books, the present head of our State Society, has taken up this work with great zeal and enthusiasm and in conjunction with the trustees of the Society has given the matter a great deal of thought and attention. As a result of his active efforts a number of county organizations have been organized during the past winter and are now in working order. It has not been found practical to organize societies in all counties as the number of physicians are too few to support organizations in some instances and it has been found advisable to form district organizations of two or more counties

grouped in a single district. There is no doubt but that this work can be carried on until every section of the State is properly organized, if the earnest efforts of Dr. Books receive the support they should from the rank and file of homœopathic physicians in Pennsylvania.

After the county and district societies have been organized, the question of forming a House of Delegates, consisting of representatives of the various county and district organizations will have to be dealt with. The function of this House of Delegates would be to attend to the business and ethical matters that come up before the Society at its annual meeting and to keep in touch with local matters through the county and district societies. This would mean a great saving of time at the annual session of the State Society, as the members would be free to devote their whole attention to the scientific and social features of the meeting, and would also stimulate interest in the local societies by keeping them in close working harmony with the State Society. It is earnestly hoped that at the coming meeting at Buena Vista Springs the plans for carrying out this state-wide organization on the County Society basis can be so perfected that the plan can be put into full working order in another year. The perfection of such a plan would mean a great deal to homœopathy and to individual homœopathic practitioners, and it is to be hoped that every man will do his share in strengthening the County Societies, as they are the basis of success in securing more perfect State organization.

G. H. W.

THE CORRECTION OF ASTIGMATISM WITH REGARD TO MILITARY SERVICE.—In the German, Swiss and Swedish armies, the wearing of cylindrical lenses is allowed. The French, Italian and Belgian armies admit spherical correction only. The latter admit that astigmats cannot shoot well; that the price of cylindrical lenses is high, and that each astigmat wears an "individual" glass.

Lagrange makes a plea to admit at least those astigmats whose vision can be raised by means of plain cylinders to the military requirements of 6-12. Contending that the price of simple cylinders is not high and that they can be replaced in case of loss by cylinders cut round and fitted into frames with side screws, which allows the lenses to be clamped in at any desired axis.—*Bordeaux, Arch. Ophthal.*

GLEANINGS

THE CAUSES OF INDIGESTION—A STUDY OF 1000 CASES.—By Douglas VanderHoof, A.M., M.D.—This clinical study is based on the histories of 1000 consecutive patients who presented themselves for the relief of chronic or recurring indigestion. The series is made up entirely of private cases, for the most part referred by the attending physicians. It embraces only those patients whose chief complaint was attributed to some disturbance of digestion, such as "stomach trouble," dyspepsia, abdominal pain or distress, flatulence, vomiting, etc., and entirely excludes patients complaining of other symptoms who were found, on examination, to have some intra-abdominal lesion.

The classification of the causes of indigestion has always been a matter of some difficulty in the past and, as a result, a purely symptomatic nomenclature has obtained which still appears in most text-books on the subject. The recent advances in physiology and surgical pathology, however, together with the intrepid explorations of our surgical colleagues, have accomplished many steps in the problem of assigning the various symptoms of maldigestion to their proper causes.

Now that the real nature of stomach symptoms is being more definitely understood, the difficulty of attempting a classification of stomach affections becomes apparent. As James Mackenzie has well said, we have been attempting to differentiate what cannot be differentiated. He emphasizes the fact that, except for certain characteristic conditions which refer only to a very small proportion of the cases, all the symptoms are of a reflex nature, pain, cutaneous and muscular hyperalgesia, muscular contraction, vomiting, air-swallowing, etc. As any adequate stimulus may suffice to produce these symptoms, and as this adequate stimulus may arise from the most varied causes, it follows that there is a great similarity of symptoms in diseases of the most varied kinds.

Mackenzie and others have shown that in visceral disease certain areas in the spinal cord become so irritable that stimuli from the periphery give rise to an exaggerated response. "This irritable focus in the cord is of great frequency in stomach affections. When pain occurs after food it must not be assumed that there is an inflammation of the mucous membrane, or that the stomach itself is hypersensitive. The ingestion of food under normal circumstances is accompanied by reflex processes which are not perceived, and pain merely indicates that there is an irritable focus in the cord through which these reflex processes pass. The lesion inducing the irritable focus in the cord may not necessarily be a stomach lesion at all, but may arise from a neighboring organ whose reflex center in the spinal cord is in close proximity to that of the stomach." Thus in gall-stone colic, or in acute inflammation of the appendix, the pain may be

so violent as to invade the stomach area in the cord, and in chronic inflammations of these same organs this invasion of the area in the cord gives rise to the various trains of symptoms referred so constantly to the stomach.

In order to determine the proportionate frequency of the various causes of indigestion, I have tabulated the clinical diagnosis in a series of 1000 patients examined by Dr. Hutcheson and myself. (Table I:) Each patient has received thorough study, including a careful history, complete physical examination and the necessary laboratory analyses, including as a routine one or more gastric analyses, urine examination, and differential blood count with hemoglobin determination. Advantage has been taken of skillful X-Ray studies, and most helpful have been the free and unconstrained consultations with my surgical confreres, Dr. George Ben Johnston and Dr. A. M. Willis, in whose operating rooms I have seen many of these patients treated surgically.

TABLE I.

Causes of Indigestion. Summary of 1000 Cases.

	Per cent.		Per cent.
Appendicitis	24.6	Entrogenous Toxemia	0.5
Cholecystitis	11.7	Affections of—	
Neurosis	10.1	Kidneys	7.1
Peptic Ulcer	9.4	Lungs	2.8
Chronic Gastritis (Achyia		Heart	2.3
Gastrica)	3.6	Eyes ..	2.0
Visceroptosis	3.4	Female Pelvic Organs	1.9
Cancer, stomach	2.3	Blood and Ductless Glands..	1.8
Post-operative Adhesions	1.6	Liver	1.1
Entrospasm	1.5	Nervous System	1.1
Migraine	1.3	Ears	0.8
Cancer, intestines	1.2	Miscellaneous	5.8
Infectious Diseases	0.8	Diagnosis not made	1.3

TABLE II.

Summary of Table I with Approximate Percentages.

	Per cent.
Appendicitis and Cholecystitis	35
Peptic Ulcer	10
Neuroses	10
Cancer (Stomach and Intestines)	5
Chronic Gastritis, Visceroptosis, Peritoneal Adhesion, Entero- spasm and Entrogenous Toxemia	10
Affections of Kidneys, Lungs, Heart, Eyes, Blood and Ductless Glands,	

Ears, Central Nervous System, Female Pelvic Organs; Migraine and Chronic Infectious Diseases	25
Miscellaneous Conditions	5

 100

A summary of Table I is contained in Table II. This shows that appendicitis and cholecystitis are responsible for approximately 35 per cent of the cases of chronic or recurring indigestion; peptic ulcer and neuroses, each 10 per cent, and carcinoma involving the stomach or bowels, 5 per cent. Ten per cent of the cases fall into a group including chronic gastritis, visceroptosis, peritoneal adhesions, enterospasm and enterogenous toxemia; while 25 per cent are included in a group in which the indigestion is a reflex disturbance from affections of the kidneys, lungs, heart, eyes, blood and ductless glands, ears, central nervous system, female pelvic organs, and migraine and chronic infectious diseases. The remaining 5 per cent, classified as miscellaneous, includes such conditions as pellagra (eight cases), amebic dysentery (six cases), malaria (five cases), diseased tonsils and cyclic vomiting (in children, respectively six and five cases), intestinal parasites (four cases), together with instances of diverticulitis, peritoneal tuberculosis, cancer of the pancreas and esophagus, retroperitoneal sarcoma, etc. In those patients in whom more than one lesion existed as a possible reflex cause of indigestion, I have tabulated, according to my discretion, the one most likely to be responsible. The occurrence of both appendicitis and cholecystitis in the same patient is so frequent, however, that the figures are more correct if these two conditions be combined as in Table II.—*Johns Hopkins Hospital Bulletin*.

NEWER KNOWLEDGE OF THE PATHOLOGY OF SYPHILIS.—Frühwald (*Urologic and Cutaneous Review*, December, 1914) states that in 1903 Metchnikoff and Roux reported that they had succeeded in transferring syphilis to monkeys. By inoculating syphilitic material into chimpanzees they obtained an inoculation sore which clinically and histologically was analogous to the human primary lesion, and this was followed by secondary papular efflorescences on the skin and mucous membranes. The products of the disease were furthermore inoculable into other chimpanzees. More important was the fact established by the same authors that lower types of monkeys were also susceptible to the syphilitic inoculation, and from these the disease could be transferred to chimpanzees. In 1906 Bertarelli was successful, by inoculating syphilitic material into the anterior chamber of the eye of rabbits, in producing a disease of the cornea which was absolutely analogous with human interstitial keratitis, and in which spirochætæ were found. Later, the simplicity of technique was increased by intravenous, intratesticular, and subscrotal inoculations. By these means the possibility was afforded to carry on investigations on a greater scale on a cheaper, more easily procurable, and more easily handled material than anthropoid apes.

This, as well as the fact found by Klingmüller and Baermann that the syphilitic virus is not filterable, encouraged a further search for the exciting agent of syphilis. This was soon accompanied by success for on March 3, 1905, Schaudin, working in common with Erich Hoffmann, discovered in the tissue fluid a closed genital sore a corkscrew-shaped, weakly

refractile structure which he regarded as belonging to the spirochætæ and named the spirochætæ pallida.

The third important discovery for the pathology of syphilis was the Wassermann reaction. After the method of complement fixation, discovered by Bordet and Gengou in 1901, had been proved on different bacteria, Wassermann, Neisser and Bruck in the beginning of 1906 applied this reaction to syphilis, first in syphilitic apes and then in man.

If we wish to follow the course of syphilis from its inception on we must begin with the infection. Here a lesion of the tissue is necessary by means of which, according to Neisser's supposition, an entrance to the blood-vascular system must exist. To-day we know that just the exposure of the lymph spaces or of the deeper epithelial places is all that is necessary.

We know the situation of the spirochætæ particularly through the investigations of Ehrmann. If by the infection the spirochætæ do not directly reach the cutis they reside in the deep epithelial layers, from which they quickly enter the cutis. They are especially found where the syphilitic infiltration is slightest—that is, on the periphery of the primary lesion; they lie between the connective tissue fibrils, which form the origin of the lymph channels, on the newly formed capillaries, and thickest in and on they lie between the connective tissues fibrils, which form the origin of the spirochætæ for the lymph-vessels is also in evidence clinically. It is worthy of notice that Ehrmann also found spirochætæ in the perineural connective tissue of a nerve and also between the fibrils. The systematic examination of the Wassermann reaction in primary syphilis shows that it becomes positive in about the sixth week after the infection. The change from the negative to the positive phase must be regarded as a generalization of the virus.

More precise conclusions are afforded in greater measure by the blood inoculations of Uhlenhuth and Mulzer into the rabbit's testicle. It is thus shown that the blood of patients with primary lesions and a negative Wassermann reaction, those namely in about the fifth week of the disease, already contains spirochætæ. The view of E. Lesser is thereby confirmed, he holding that the metastatic symptoms of syphilis, including the first exanthem and the primary lesion, have an incubation period of three weeks. In fact, we see that in the fifth week after infection spirochætæ are found in the blood, and in the eighth week we must expect the outbreak of the exanthem.

With the eruption of the first exanthem syphilis enters upon the so-called secondary stage. The question now arises whether the appearance of the eruption is synchronous with a sudden inundation of the skin with spirochætæ. Against this presumption there is the clinical observation that after an intravenous salvarsan injection in patients with a primary lesion the eruption often appears. If this reaction, according to the investigations of Luithlen, is due to the toxins of the disease, we must then conclude that the spirochætæ have for some time been present in the skin and begun their activity. Closer information has been afforded by blood inoculations; on the one hand we have seen that the spirochætæ are in the blood three weeks before, and on the other hand it has been shown that in an eruption of many weeks' duration spirochætæ are still found

circulating in the blood. The fact seems to be, consequently, that we are not dealing with a sudden dissemination of the virus but with a constant supply of it, evidently from the glands.

The efflorescences of the secondary period are all dependent upon the presence of the exciting agent of syphilis. In the divers skin changes—roseolæ, papules, pustules, etc.—spirochætæ can be demonstrated either microscopically or by animal experiment. Especially conspicuous has been malignant syphilis which leads to early destruction.

Of the very greatest importance is the finding of spirochætæ in places which have not yet shown any syphilitic symptoms; some authors have succeeded in demonstrating spirochætæ in the apparently intact epithelial covering of the tonsil which was not at all the site of specific efflorescence. We must, therefore, assume that spirochætæ may be located in the skin and macroscopic changes visible. Clinical observations would seem to confirm this: on the one hand the appearance of leucoderma in places which were previously not the site of the exanthem, and on the other hand the so-called Jarisch-Herxheimer reaction. Since the introduction of salvarsan therapy this is observed more frequently, and consists of an intense reddening and swelling of the pre-existing exanthem with the appearance of efflorescences on areas of heretofore intact skin.

Upon the healing of the efflorescences of the secondary period, whether it be spontaneously or by treatment, syphilis enters upon the latent stage, that peculiar period in which the existence of the syphilitic infection allows no conjecture, but which is again followed by a new exanthem. The question as to where, during this period of apparent cure, the spirochætæ are located has at all times interested investigators. Here modern inquiry has brought light. Systematic examinations by the Wassermann reaction have shown that about 50 to 60 per cent of latent syphilitics give a positive reaction. Without going into the question whether this positive result indicates that the individual is still syphilitic, or whether he at one time was infected with syphilis, it is evident that in more than half the number of latent syphilitics the infection is not perceptible, while in the others it is. Thus we have gained an indicator for the discernment of singular cases which can be viewed apparently as infection through a latent syphilis.

Furthermore, we are able to demonstrate spirochætæ in the residual luetic patch. In the remainder of the primary lesion, exanthemata and papules, as well as in the epithelium of the tonsils, spirochætæ have been repeatedly found a shorter or longer time after the syphilitic symptoms have disappeared. It is, moreover, further possible to inoculate the same residues into animals with results so that it is evident that these spirochætæ are also virulent. This fully confirms the finding of Fr. Neumann, who demonstrated that places formerly the site of a syphilitic exanthem showed histologically the remains of inflammatory perivascular infiltration, and that this was the principal cause of recurrences.

Further explanations have been afforded by blood inoculations. It has been shown that patients who outside of a positive Wassermann show no symptoms of syphilis whatsoever may possess spirochætæ in their blood.

The pathology of syphilis of the internal organs derives a particu-

lar advantage from the Wassermann reaction. In suspicious syphilitic disease of an organ the Wassermann reaction can afford valuable diagnostic aid, but it must be always kept in mind that the positiveness of the reaction only signifies that the individual is syphilitic and not that the particular organ is diseased syphilitically. Spirochætæ have also been demonstrated in the internal organs, in the adrenals, in the lungs, in the liver, in a gumma of bone, in aortitis and in arteritis of the cerebral arteries in the later period. It is also worthy of mention that spirochætæ have been found in the urine in cases of syphilitic nephritis, from which we may conclude as to the infectiousness of the urine in syphilitics.

In just as revolutionary a way have modern investigators worked in the field of so-called metasyphilis. It has been proved that the Wassermann reaction is practically constant in progressive paralysis. In tabes dorsalis it is somewhat less frequently constant. Thus from clinical experience as well as from experimental inoculations the view is supported of a relationship between progressive paralysis and tabes and syphilis. Recently there occurred the demonstration of the spirochætæ pallida in metasyphilis. It is known that Noguchi succeeded in finding spirochætæ in the brain of paralytics and in the posterior tracts of tabetics. His findings were quickly confirmed everywhere. It is also possible by brain puncture in the living patient to demonstrate spirochætæ in the dark field. Furthermore, brain substance from paralytics can be inoculated with success into animals, and rabbits can be infected with the blood and cerebrospinal fluid from paralytics and tabetics. These findings are of the utmost importance, for they show that in both heretofore cured metasyphilitic diseases spirochætæ are found not only in the affected organs but also in the blood and cerebrospinal fluid, and that these spirochætæ are virulent. Therefore a direct connection between syphilis, paralysis, and tabes must be accepted. Undoubtedly the last word on this question has not yet been said, but by no means is there any question, as Hoche and lately Meyer have shown on the basis of positive spirochætæ findings, even though there are many negative results in existence, that tabes and paralysis are to be accepted as fully equivalent with the heretofore known forms of cerebral syphilis.

The question of hereditary syphilis has also experienced a distinct advancement through the new modern investigations. It was formerly supposed that syphilis could be transmitted to the fetus either by the placental or by the germinal route. In the latter case there were two possibilities: there was either a spermatic or paternal or an ovulary or maternal infection. In other words, the syphilitic virus was either transmitted to the healthy fetus from the diseased mother through the navel blood, or it was already present in the ovum, or it was transported by the spermatozoön to the ovum.

In 1903 Matenauer undertook a searchingly critical work on the question of hereditary syphilis and examined all the proof relating to germinative infection. He could find none of it that would stand the test, and his conclusion was that there is no hereditary syphilis without syphilis in the mother and that the placental route of infection was the only possible mode of infection.

In a brilliant way this was confirmed clinically through the Wasser-

mann reaction. Investigations have shown that the apparently healthy mother of hereditary syphilitic children shows a positive Wassermann reaction as often as latent syphilitics. Colles's law, which declared that the healthy mother of syphilitic children is immune, was consequently abandoned. The Wassermann reaction shows, however, that she is only immune because she herself is latently syphilitic. At the same time the incorrectness of Profeta's law was substantiated. This law stated that healthy children of syphilitic parents are immune against syphilis. Here also it has been shown that they are immune for the reason that they themselves have syphilis.

Uhlenhuth and Mulzer have been able to infect rabbits with syphilis by inoculations with the blood of women who, a short time previously, had given birth to syphilitic children. These authors, by inoculating the milk of two women who shortly before had given birth to syphilitic children, as well as that from a pregnant woman with an exanthem, into rabbits have succeeded in thus transmitting syphilis to the rabbits. Arzt and Kerl have obtained equally successful results by inoculating rabbits with the milk of a woman who had latent syphilis.

Modern investigations in syphilis have also destroyed the one-time favorable view that the spermatozoa of syphilitics are not infectious, which was supported by Matzenauer. Finger and Landsteiner, as well as Uhlenhuth and Mulzer, have twice succeeded in infecting monkeys as well as rabbits with the spermatozoa of syphilitics. Of the patients who were used for these experiments, one of them suffered from a fresh papular syphilis four months old, another suffered from a recurrent exanthem with papules in the mouth, a third from hypertrophic and anal papules and papules in the mouth, and a fourth from a syphilitic orchitis.

It is evident, therefore, that the spermatozoa are also infectious even when there is no existing testicular disease. The virus can get mixed in with the spermatozoa in the long route from the testicle to the external orifice of the urethra. It must be emphasized however that the infectiousness of the spermatozoa does not indicate a paternal mode of infection of the fetus. When we say that the spirochætæ are conveyed by the spermatozoa to the ova and into the tube, it may with just as much justice be imagined that the ejaculation into the vagina or at the portio produces a primary lesion from which the maternal organism becomes infected, and then the fetus.

In any event, spirochætæ are demonstrable in the placenta of hereditary syphilitic children. There is no further question, when we consider that the infection of the fetus follows through the blood stream, that spirochætæ are also to be found in all the organs, in the blood and cerebro-spinal fluid of such syphilitic children. It is worthy of mention that the presence and demonstration of spirochætæ in the teeth, in the eye, and in the internal ear explains Hutchinson's triad: keratitis parenchymatosa, deformity of the teeth, and central deafness.

Equally important is the finding of spirochætæ in the borders of bone and cartilage in osteochondritis luetica, which explains Parrot's pseudo-paralysis. And not only the internal organs, but the secretions also—salivary, conjunctival and nasal—contain spirochætæ. The latter can be successfully inoculated. The urine, perspiration and sputum of hereditary

syphilitic children must be regarded as potentially contagious inasmuch as Pasini succeeded in demonstrating spirochætæ in the sweat glands, lungs and kidneys.

Before touching on the influence of modern investigations in syphilis on the therapy of the disease, it must be mentioned that it is possible to make the Wassermann reaction negative by a specific treatment. We have in the Wassermann reaction a means of judging the effect of therapy as well as an indication for the repetition of treatment.

By experiments on monkeys Beisser studied the question of the excision of the primary lesion, and, as in experiences on man, he obtained very variable results. This is perfectly clear if we recollect that spirochætæ are already circulating in the blood in the fifth week after infection. Still, excision must not be rejected as there is a likelihood of killing some of the virus. In this regard Scherber's case is in point. The patient had the fresh lesion excised in which, histologically, spirochætæ were found almost to the edge of the incision, from which it would appear that the spirochætæ were completely removed by the excision. During an observation period of six years this patient remained free from any symptoms. He was able to observe a similar case for three years, in which he performed such an excision, although according to the condition of the case spirochætæ must have been present in the blood; the patient has remained clinically and serologically free from symptoms.

Disinfection experiments have been made on animals with a view to prophylaxis of syphilis, and the most varied antisyphilitic remedies were tried—preparations of mercury, arsenic, and iodine—on syphilitic animals. The results have, naturally, only a conditional value, as they cannot be carried over into human beings. The same thing has been observed in regard to investigations on immunity in syphilis and experiments on immunization. It appears pretty well settled that an actual immunity to syphilis does not exist, but only a relative refractoriness to a new infection as long as the disease exists.—*Therap. Gazette*.

THE MEDICAL TREATMENT OF PEPTIC ULCER.—George Blumer, M.D. *Johns Hopkins Hospital Bulletin*, May, 1915, discusses the treatment of gastric ulcer with especial reference to the question of diet. The author believes that ulcer patients with acute perforation, with pyloric obstruction, with ruptured small hemorrhages intractable to medical treatment and those with serious perigastric adhesions, should at once be turned over to a competent surgeon. On the other hand he believes that the great majority of patients with hemorrhage of the fulminating type, those with acute ulcers and those with uncomplicated chronic ulcers, should have the benefit of carefully regulated medical treatment before being submitted to the knife.

A brief summary of the various methods that have received widespread recognition in the treatment of gastric ulcer is given as follows:

The von Leube Regimen.—

1. Absolute rest in bed one to two weeks; in the average case, 10 days. From the 11th day on for a period of several weeks, the patient must rest one to two hours after the principal meals.

2. One quarter liter of lukewarm Carlsbad water one-half hour after Breakfast for the first four weeks.

3. Hot flaxseed poultices to the epigastim, changed every 10 to 15 minutes, and kept on from 8 a. m. to 8 p. m. Before applying the poultices, the skin should be thoroughly cleansed, and a borax-wax ointment should be applied. From 8 p. m. to 8 a. m. a Priessnitz compress is applied instead of the flaxseed poultice. If blisters form, which is not uncommon from the third to the tenth day, empty, wash with ether, dust with dermatol. Poultices must only be used if there has been no history of bleeding for three months.

4. The following diet in the form of three main meals and two accessory meals daily. The food must be measured accurately, and never more than 250 cubic centimeters of milk given at a feeding.

First 10 days, cooked milk, meat juice once a day, bouillon, softened Zwiebach, and cakes not sweetened. Two pieces of Zwiebach and four cakes allowed daily.

From 11th to 17th day, the first diet, plus mucilaginous soups, rice and sago cooked soft in milk, with beaten-up egg. Soft-boiled and raw eggs, calves' brains, and young chicken and pigeon.

From 18th to 22nd day, well-cooked calves' feet, thin sliced raw ham, thin sliced rare beefsteak, mashed potatoes, bouillon containing mashed rice, a little coffee and tea.

From 23rd to 30th day, lean roast beef, underdone broiled chicken and pigeon without sauce, venison and partridge which have hung until tender, macaroni, cut-up noodles beaten through a sieve, and a little white bread.

From the 5th week on, cold veal or pike, light souffles and desserts of rice, sago and maizena, and one to two glasses of a pure wine are allowed.

Patients with bleeding ulcers have:

1. An ice bag to the epigastrium.
2. Complete starvation for from one to three days.
3. During the period of starvation, nutrient enemata.
4. No cathartic should be given to these patients during the first week.
5. Adrenalin, bismuth and morphine medication.
6. After the period of starvation, the regular regimen.

Einhorn's Diet.—

In bleeding cases, rectal feeding from three to five days, with small quantities of cracked ice and gelatin by mouth. After bleeding is over, or in non-bleeding cases, the following diet:

First three days. Hourly feeding from 7 a. m. to 9 p. m., inclusive. At each feeding, 150 cubic centimeters of milk, except at the following hours: At 10 a. m. milk and strained barley; at 1 p. m., 150 cubic centimeters of bouillon alone, or with the addition of 1 to 2 drams of peptone; at 5 p. m., strained barley or oatmeal is added to the milk again.

4th to 10th day. Feeding every two hours from 7 a. m. to 9 p. m.

300 cubic centimeters of milk are given at a dose. At 11 a. m. and 7 p. m., strained barley, rice, or oatmeal are added. At 1 p. m., 200 cubic centimeters of bouillon into which an egg is beaten, is substituted for the milk.

11th to 14th day. Feeding every two hours from 7 a. m. to 9 p. m. The milk is the basic ration in a dose of 300 cubic centimeters. At 9 a. m. and 5 p. m., two softened crackers are added to the milk. At 11 a. m. and 7 p. m., strained barley, rice, or oatmeal gruel. At 1 p. m., 200 cubic centimeters of bouillon with an egg beaten into it and two crackers take the place of the milk.

14th to 17th day. Feeding every two hours from 7 a. m. to 9 p. m. Basic ration, 300 cubic centimeters of milk, to which are added at 9 a. m., two crackers; at 11 a. m., barley, rice, or oatmeal gruel; at 5 p. m., one soft egg and two crackers; and at 7 p. m., farina. At 1 o'clock, 50 grams of scraped meat and 200 cubic centimeters of bouillon, with two crackers, are substituted for the milk.

17th to 24th day. 7 a. m., two soft eggs, 10 grams of butter, 50 grams of toast, and 300 cubic centimeters of milk. 10 a. m., 300 cubic centimeters of milk, with 50 grams of cracker and 20 grams of butter. 1 p. m., 50 grams of broiled lamb chops, 50 grams of mashed potato, 50 grams of toast, 10 grams of butter, and 200 cubic centimeters of bouillon. 4 p. m., same as at 10 a. m. 6.30 p. m., 300 cubic centimeters of milk and farina, 50 grams of cracker and 20 grams of butter. 9 p. m., 300 cubic centimeters of milk.

Since 1903, the author has added raw eggs to this diet, beginning with two on the first day and increasing one a day until eight a day are taken. After two weeks, soft eggs may be substituted.

Middlesex Hospital Regimen (Starvation Diet).—

This diet is intended for cases with pain, vomiting and hemorrhage, especially the latter.

1. Starvation until epigastric tenderness disappears, usually the 3rd to 10th day. During the starvation period, give water per rectum, beginning with five ounces, increasing to eight and finally to 10. When the patient can tolerate 10, give this amount every four hours. Wash out the colon every morning with one or two pints of water.
2. Graduated feeding, beginning with equal parts of milk and lime-water, one ounce of each every two to four hours, gradually increasing dose and time interval. The milk may be thickened by plasmon or Glidine.
3. Next, junket, custard, jellies and meat extracts are allowed. Still later, calves' and sheeps' brains. When these are well tolerated, tripe, sweetbreads, stewed sheep's tongue, flat-fish, and milk puddings are allowed. As the food is increased, the enemata are gradually discontinued.

The accessory medication consists of calcium lactate, 15 grains in 10

ounces of water every four hours per rectum, for hemorrhage; chloretone, 10 grains in 10 ounces of water per rectum, every four hours for restlessness and vomiting; oxygen inhalations a few minutes at a time for vomiting; and 10 minims of 3½ per cent solution of peroxide of hydrogen twice daily, in a capsule prepared at the bedside.

The Lenhartz Regimen.—

1. Absolute rest in bed for at least three weeks—longer in severe cases.
2. Avoidance of all mental excitement.
3. An ice bag to the epigastrium for the first two weeks of the cure.
4. Bismuth subnitrate 30 grams, two to three times a day.
5. The following diet:

Day.	Eggs.	Milk.	Sugar.	Scraped Beef.
I.	2 dr. per dose; total, 2 eggs.	4 dr. per dose; total, 6 oz.		
II.	3 dr. per dose; total, 3 eggs.	6 dr. per dose; total, 10 oz.		
III.	½ oz. per dose; total, 4 eggs.	1 oz. per dose; total, 13 oz.	(¹)	
IV.	5 dr. per dose; total, 5 eggs.	1½ oz. per dose; total, 1 pt.	(¹)	
V.	6 dr. per dose; total, 6 eggs.	14 dr. per dose; total, 19 oz.	30 gm.	
VI.	7 dr. per dose; total, 7 eggs.	2 oz. per dose; total, 22 oz.	40 gm.	36 gm. in 3 doses.
VII.	4 dr. per dose; total, 4 eggs. Also, 1 soft-boiled egg every 4 hrs.; total, 4 eggs.	2 oz. per dose; total, 25 oz.	40 gm.	70 gm. with boiled rice, 100 gm. in 3 doses.
VIII.	....do	2½ oz. per dose; total, 28 oz.	40 gm.	Do.
IX.	....do	3 oz. per dose; total, 1 qt.	40 gm.	Beef same. Rice, 200 gm. Zweibach, 40 gm. in 2 portions.
X.	....do	Add cooked chopped chicken, 50 gm., also butter, 20 gm.	40 gm.	Do.
XI-XIV. Interval of feeding made 2 hrs., milk given in 6-oz. doses, with ½ oz. of raw egg. Butter increased to 40 gm., and various additions made, as detailed above.				

¹ 20 gm. added to eggs.

The milk and eggs are given separately, according to the original diet, but may be mixed. A small amount of good sherry may be added. The milk and eggs are prepared in a covered glass tumbler surrounded with cracked ice, and kept at the bedside. The feeding spoon is kept iced in the same manner. The patient is fed by spoonfuls by the attendant.

Up to the 10th day, food is given at hourly intervals from 7 a. m. to 9 p. m., the egg and milk mixture being divided into 15 equal portions. There is complete rest during the night.

From the 11th to 14th day, the interval of feeding is made two hours, and the milk and egg in 6-ounce doses with ½-ounce of raw egg.

From the 7th day on, one-half of the eggs may be given in the form of soft-boiled eggs.

The solid food, rice, scraped beef, ham, and soft-boiled eggs, are

best given at periods which would correspond during health to regular meal hours.

As suggested by Lambert, finely chopped cooked chicken can be substituted for the raw meat and ham in the original diet.

In cases with hemorrhage, no attempt should be made to move the bowels for the first week; after this, enemata may be used. In cases not complicated by hemorrhage, enemata are also the best means of moving the bowels.

Hort's Regimen.—

1. Care of the mouth and teeth, with especial attention to pyorrhœa and caries.
2. Purgative pill every night for two weeks.
3. Restriction of the fluid intake. Tea, coffee and alcohol absolutely forbidden. Soups, broths, beef-tea, and milk usually excluded.
4. Rest. 10 to 14 days in bed, and 10 to 14 days in a reclining chair.
5. A dry protein diet, mainly meat at frequent intervals. For example:

Breakfast, toast with butter and lightly cooked eggs.

11 a. m., two to three ounces of raw beef juice, freshly made.

1 p. m., beef, mutton, or lamb, served as joint, steak, chops, or cutlet, lightly cooked and served in fresh gravy, without vegetables. This is the entire meal, except toast or one or two rusks, with butter if preferred. The amount of meat is regulated by the appetite.

4 p. m., same as breakfast.

7 p. m., same as 1 p. m.

9 p. m. same as 11 a. m.

If there is pain in the night, small sandwiches of stale bread and pounded chicken are allowed. This diet is gradually worked up to during the first week. Once established, it should be continued for a month after the patient goes back to work.

6. Ten cubic centimeters of atoxic, sterile horse serum or sheep serum, three or four times a day, immediately after food, in half an ounce of cold water.

In bleeding cases:

1. Ice water through an oiled stomach tube.
2. Morphine and atropine.
3. Subcutaneous injections of horse serum.
4. No food for one to two days.
5. For three days, jellies, soft eggs and pounded chicken until all the hemorrhage ceases.
6. After this, the preceding diet.

Jarotsky's Egg and Oil Diet.—

The egg and oil are given separately, the egg in the morning, the oil in the afternoon, with several hours interval between them. At the beginning of the treatment, patients receive the white of one egg in the morning, and 20 grams of olive oil in the afternoon. Each day the

white of one egg and 20 grams of olive oil are added to the amount given the day previously. The eggs may often be increased to eight a day, and the oil to 120 to 140 grams daily, or more, if the patient can tolerate it. In patients with bleeding ulcers, no food is given by mouth for two or three days, and during this period the patient receives nutrient enemata, or the egg and oil diet is restricted to one egg and 20 grams of oil daily, until the hemorrhages cease. The nutrient enemata are given until the diet is increased to a point where the patient is taking the whites of several eggs a day; they are then gradually discontinued.

The author is inclined to favor Lenhart's treatment in preference to the other methods presented. The mortality under the Lenhart treatment is about 2 3-10 per cent as a rule. The treatment is eminently satisfactory from the patient's point of view. They seldom complain of hunger and the pain accompanying the ulcer usually disappears within a few days. Most patients lose weight during the first week or ten days but usually gain considerably over their normal weight before the termination of the treatment. The principles underlying the treatment are, first,—hyperacidity plays an important role in preventing healing and that free acidity must be neutralized by acid-binding food and, second,—that the general nutrition must be maintained and anaemia must be combated to favor healing of the ulcer.

THE SIGNIFICANCE OF THE VON PIRQUET TEST.—*In the Medical Record* of January 9, 1915, Frazer reaches these conclusions as to the Von Pirquet test in reaction:

(1) A positive cutaneous reaction is less frequent in children than it was once thought to be, the high percentage of reaction obtained being due to the application of the test chiefly to the infected children of the poorer classes, and (2) that therefore a positive reaction is of greater significance than it is commonly supposed to be. (3) That while there is an increasing percentage of reaction with years, and a corresponding decrease in the value of reaction, the view usually held that the reaction has significance only during the first two or three years of life is not borne out by recent figures, and that we should be suspicious of a reaction occurring up to the age of ten. (4) That annual tests be instituted in the effort to detect early infection, and that, bearing in mind the fact that many if not most cases of clinical tuberculosis in later years are due to renewed activity of old foci, we should seek by proper means to prevent the development of "infection" into "disease." (5) That a negative reaction, negative on repetition of the test, is valuable evidence of the absence of tuberculosis unless the child be suffering with advanced or acute disease, especially measles. (6) That further study of the tests is necessary before we can fully interpret the reactions, and that, in the future, it is possible that refinements of technique may enable us to determine with greater accuracy the recency of the infection.—*Therapeutic Gazette*, May 15, 1915.

THE TREATMENT OF TRACHOMA BY SNOW.—Trachoma is considered cured when the following conditions are complied with:

I Absence of discharge of any kind, whether purulent, seropurulent, serous, or lacrimal.

2. A smooth appearance of the palpebral conjunctiva and an absence of hypertrophy in the conjunctiva of the fornices.

3. The reduction of pannus to a minimum, as revealed by the presence of old involuted vessels in the superficial layers of corneal epithelium, if Bowman's membrane has remained intact; and by the presence of old opacities, if Bowman's membrane has been destroyed in part and the superficial layers of the substantia propria have been involved in the trachomatous process.

4. The absence of any gross deformity of the lids, such as entropion.

With the exception of the last condition, all these may be obtained by the use of solid carbon dioxid for thirty seconds once in ten to fourteen days in the course of three months, in a chronic, and in the course of six months in a recent case.

Over seven thousand cases have been treated in China with successful results. It has proved to be the most rapid method of cure when employed in conjunction with other recognized methods, such as the maintenance of cleanliness, "expression," when needed, with Knapp's roller forceps, the treatment of pannus by means of X-rays, and the treatment of entropion by Snellen's operation.

Method of Procedure. The snow is collected in a Prana cage and rammed down tightly into a cylindrical mould; if preferred, a specially-shaped mould may be used, so that the stick of snow may be shaped to fit the everted lids. Harston generally prefers, however, to sharpen the cylindrical stick to a pencil-point. The surgeon stands behind the patient and everts the lids in the ordinary manner. In Europeans he installs cocaine and adrenalin before applying the snow, but Chinese stand the application well without an anesthetic. The transitional folds are made to stand out prominently, and the snow pencil is applied horizontally to the everted lids, with very firm pressure, for fifteen seconds at the first application, and for thirty seconds to all subsequent ones. Care must be taken to avoid contact of the snow pencil or the frozen conjunctiva with the cornea. Harston generally runs his forefinger over the everted lid to make sure that no gritty particles are left behind on the conjunctiva. After an interval the lid is replaced. The ensuing pain is infinitesimal when compared with that which follows the application of "blue stone" and other caustics. After two minutes the patient can open his eyelids without any ensuing blephorospasm. As regards the extensive scarring which is alleged to follow, the author has had none in his experience. He believes that it may be due to too frequent application of the remedy, the snow being applied before all reaction has subsided from the previous application.

The application of solid carbon dioxid snow induces a chronic hyperemia of the conjunctiva; in fact, we have in this method of treatment a modification of Bier's hyperemic treatment, so useful for other forms of granulomatous disease.

The action of the remedy is exactly comparable to the action which follows applications of a pressure bandage to the knee in tuberculous disease of that joint, and I attribute the beneficial effects to the chronic hyperemia induced.—*C. Montagn Harston. Ophthalmoscope.*

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

SOME OBSERVATIONS ON SERPENTS.—Folk-lore and tradition are responsible for an almost universal antipathy to reptiles. Mankind is at a loss to find a reason why this interesting class of vertebrates should have become associated with unfavorable prejudice, unless it be that the mysterious, enshrouding their lowly lives, has fostered the superstitions which have become crystallized into a popular natural history. When once the threshold of investigation has been passed however, some of these queer notions disappear from view. Disregarding with mere mention the popular notions concerning the repulsive sliminess of the snakes; the idea that they can charm their prey; swallow their young for protection; that the tender tongue, an organ of sensitive nerves, is the sting, and the host of such survivals current from the earliest childhood study of anything that may crawl or writhe, we come upon a rather interesting field of living nature.

Deprived of limbs, ears, voice and eye-lids by a degenerating specialization from the more vivacious order of lizards, the snakes are perhaps less known in ordinary life than any other class of creature. However, as a compensation for the loss of so many organs, nature has bestowed on them other faculties. So the snakes, through disuse, having lost their limbs in evolution, possess great agility in locomotion, a circumstance due to their great flexibility of the spine. In addition they may crush their prey by constriction. The most generous phase of compensative evolution is however, to be seen in some families of snakes which have acquired a perfectly equipped apparatus for the hypodermic injection of poison through a pair of fangs in the upper jaw, leading from poison glands in the palatal region. In different families of snakes we find this apparatus in various stages of metamorphosis. There are those whose dentition lacks a poison-bearing feature. There are those with elementally formed venom-conducting organs. And there are those with a completely formed system with a grooved fang mechanism. Here, we find the cobras, the vipers, the copperheads and the rattlers. They prove a very interesting lot. Some of the lizards, too, show specialization in this direction, notably the gruesome *Heloderma Horridus*, the Gila monster of the southwestern deserts of North America. Here, however, the poison glands and fangs are in the lower jaw. While these are the only poisonous lizards, we find, by contrast, that among the snakes, out of some two thousand species, about one-third of the number are venomous. In Australia the venomous forms exceed the harmless ones, while the latter outnumber the venomous varieties in other portions of the globe.

Snakes are gifted with a very sensitive nervous system which presents some very mysterious phenomena. For instance, the forked tongue is regarded as capable of receiving vibrations. Moreover, examination shows that at the end of each scale on the body of some genera there are minute pits where nerves exist, probably for the purpose of receiving sound stimuli. A well-developed sense of scent and the possession of scent-exuding glands enable the reptiles to trace their mates as well as to sense the nearness of their prey. A marvellous power of distension in the joints and skin of the neck, which enables the serpents to engulf animals much larger than themselves in diameter, and their intense powers of digestion, are likewise unique among vertebrates. The phenomena of reproduction presents another field of research equally interesting, while the problems of influence in coloration are manifold. Perhaps no field, when properly developed, would yield better illustrations of the effect of environment upon type in the development of species and sub-species than a complete study of one genus of snakes under different geographic and climatic surroundings.

There are only two venomous species of snakes in this latitude—the rattlesnake and the copperhead. They are snakes possessing two grooved fangs, hinged so that when not in use they lie folded against the roof of the mouth. They are of the Crotalid family. Neither are found in the immediate vicinity of Philadelphia. They prefer the mountainous regions where, oftentimes, they occur locally in numbers known in the country vernacular as “dens.” It is a simple matter to identify them by the broad jaws and narrow neck, giving the head the appearance of the ace of spades. Sluggish in temperament, both of these dangerous reptiles prefer safety in flight to aggression.

There are approximately two hundred different species of venomous snakes, each specie being composed of more or less numerous varieties but there is only one serpent out of this huge lot which is a polycrest as well as an accredited prophylactic thus far, and that is the above mentioned rattler—the *crotalus horridus*. Each snake venom differs from any other. Each induces a characteristic sequence of pathogenetic effects in the prover, and the degree of virulence of each vary by habitat, climate, seasonal change and altitude.

Curiously enough the environs have even an influence upon mimicry in certain reptiles, giving to harmless species the manner and appearances of the deadly types. Within a few miles of Philadelphia one encounters a perfectly harmless reptile, the Heterodon, or hog-nosed snake, the clown of the snake tribe, who by his ferocious manner, hissing and spreading of the head and neck, simulates the appearance of the most deadly reptiles. He may be known by his short stubby form and upturned rostral scale, giving the appearance of a horn on the nose. These snakes common in New Jersey and the sandy regions of the East are known locally as “blowing adders” or “sand vipers” and are greatly feared by the ignorant country folk. The creature is not even savage and will not even attempt to bite. The teeth, indeed, are incapable of inflicting more than a series of pin-pricks. This snake has the interesting habit of feigning death when its other displays of anger have not deceived its enemy.

It will roll over on its back and remain limp for a few minutes, slyly coming to life again, apparently, when the danger has passed.

In describing the animal poisons Farrington once said: "Many of the animal poisons are distinguished by the violence and intensity of their action, and by the decided alterations which they produce in both structure and function."

It might not be inappropriate here to briefly review the history of the *crotalus horridus* as a prophylactic of yellow fever. In 1854, Dr. Wm. S. Humboldt, of New Orleans, observed that the galley slaves from Mexico, after having been bitten by some snake, which was supposed to have been the rattler, *always had decided symptoms of yellow fever*. After instituting a series of experiments by inoculating with snake venom (supposed to have been the *crotalus horridus*), he wrote the Government of Cuba, stating that he had discovered a substance which would serve as a prevention of yellow fever. Upon receipt of this news the Governor invited him to Havana and placed a ward of the Military Hospital under his absolute control. The inoculations were successful in producing phenomena analogous to yellow fever, just as vaccination produces symptoms similar to smallpox. For who will deny that vaccinia is nothing more or less than modified variola? The news of this great discovery concerning the venom produced a marked sensation among the people. They considered it as important as the discovery of Jenner, and everyone was possessed with the idea that some means was at hand to stem the current of the pestilence of the then prevailing fever, and thus render habitable to emigrants regions formerly forbidding. Dr. Mancina was soon associated with Dr. Humboldt in his investigations, and during the winter of 1854 some twenty-five hundred individuals were inoculated. In the summer of 1855 during an epidemic of some five hundred cases of Asiatic cholera in the city of Havana those who had been inoculated with the *snake venom* were immune to *cholera*. This is really easily seen because yellow fever in its second stage is much like it symptomatically. Now it is a known fact in those old days that of the number inoculated, but very few contracted yellow fever, and *those few* had it in very slight form, and it remains a well-known fact to this day in the fever district that those who have been bitten by a rattlesnake are immune to yellow fever. Dr. B. Mure instituted a proving of the venom of the rattlesnake, *crotalus cascavella*, in 1843, a record of which, in connection with the progressive symptoms of the bite, give the most complete analogue of the phenomena of yellow fever of any known substance. Since the time of Dr. Mure, other medical men have verified the specific value of *crotalus horridus* as *the remedy in epidemic yellow fever*, and also in black vomit or malignant bilious fever.

As far as reptilian venoms go, of late years, two names stand out more prominently than any others. One is Professor Calmette, known also for his remarkable contributions to the study of tubercle whilst the other is Sir Thomas R. Fraser, of Edinburgh, a name identified with the introduction of the drug strophanthus into the treatment of cardiac disease.

All workers in this field are, however, agreed that the general effects of the venoms of snakes are represented by two grand divisions, viz.: the cobra of the genera colubridae and the lachesis of the genera viperidae. The effect produced by their toxic action is manifested in two series of

phenomena. The first is *local*, affecting the seat of the bite only, whilst the second is *general*, affecting the circulation and the nervous systems. Professor Calmette states: "It is remarkable to find how great is the importance of the local disorders when the venomous reptile belongs to the viperidae lachesis group, while such local effect is almost nil in the hydrophyidae or naja, i. e., colubridae group. The effects of general intoxication on the contrary are much more intense and more rapid in the latter than in the former." In considering the usual phenomena of snake poison in man, we must, therefore, take into account the essential differences of the effects of the various species and give a description of the clinical symptoms observed after a bite from a cobra or krate of the species colubridae and those that accompany a bite of the lachesis of the species viperidae.

The bite of the cobra, even if of large size, is not very painful. It is especially characterized by numbness which, beginning in the bitten parts, rapidly extends throughout the body, producing attacks of syncope. The patient soon experiences a kind of lassitude and an irresistible desire to sleep. His legs scarcely support him. He breathes with difficulty, and his respiration becomes of the diaphragmatic type. By degrees the drowsiness and difficult breathing increase. The pulse at first rapid, becomes slower and gradually weaker. The mouth contracts and there is profuse salivation. The tongue appears swollen, the eye-lids drooping, and after a few hiccoughs frequently accompanied by vomiting and involuntary emissions of urine and faeces, the unfortunate victim falls into the most profound coma and dies. The pupils react to light up to the last moment, and the heart may continue to beat for two hours after respiration ceases, and then stops on its diastole. All of these changes take place in a few hours, usually from two to four, rarely lasting longer. Cadaverie sets in very rapidly and persists for a long time, even after putrefaction has commenced.

When the reptile by which the bite is inflicted is one of the viperidae family, such as the lachesis, for example, the site of the bite immediately becomes very painful and red, then purple, the surrounding tissues soon becoming infiltrated with sanguinolent serosity, and there are sharp pains accompanied by attacks of cramps that extend towards the base of the limb. The victim complains of intense thirst and extreme dryness of the mouth and throat. The mucous membrane of the eyes, mouth and throat becomes congested. These phenomena often continue for more than twenty-four hours, and are sometimes accompanied by hemorrhages from the eyes, mouth, stomach, intestines or bladder, and by more or less delirium, if the quantity of venom absorbed be sufficient to cause death. A few hours later the patient exhibits stupor, insensibility and then somnolence, with increasing difficulty of respiration, which at last becomes stertorous. Complete loss of consciousness appears some time before coma ensues, which is followed by asphyxia, the heart continuing to beat for one-fourth hour after respiratory movements have entirely ceased. In exceptional cases death is very rapid. It may supervene suddenly, even before the phenomena above described have manifested themselves. In such a case the venom has directly penetrated a vein producing almost immediate coagulation of the blood and forming general embolism. The

result is almost invariably fatal if the venom be either, introduced into a highly vascular region or directly into a vein. On the other hand, if the derma be scarcely broken or if the clothing has acted as a protection, hardly any absorption will take place. The above facts are also true in regard to bites inflicted by animals suffering from rabies.

The bite of a venomous snake will be more or less grave according to the following: (a) whether the bite is exposed or covered; (b) whether the snake is large and strong with long fangs, or small with short fangs; (c) whether the venom sacks are full or have been recently partially emptied by a previous attack. Another important factor in regard to the intensity of snake venom is the condition and environment of the snake. The venom of a dry land snake is at its maximum during very warm and dry weather, after a prolonged fast, and shortly after its moulting season. On the contrary it is at its minimum if the snake has been recently well fed, just before its moulting season, in the early spring time, i. e., in the temperate zone, in cool damp weather or during and just after an electric storm, the proportion of degree being about ten to one. When the quantity of venom introduced into the organism is sufficient to cause death, the phenomena which precede and accompany recovery differ greatly according to the snake from which it was derived, i. e., whether from the specie colubridae or viperidae.

After a non-lethal bite from a cobra or krate, for example, convalescence usually takes place very rapidly, and apart from the edema of the subcutaneous tissue surrounding the wound, which in very many cases leads to suppurating abscess, no lasting injury to the health is observed, the venom being eliminated by the kidneys without even causing albuminuria, sensation in the parts affected returning within twenty-four to forty-eight hours. On the other hand, if the bite has been inflicted by a viperidae snake the local lesion is more extensive than the colubridae, and almost always results in the formation of a patch of gangrene. There are also hemorrhages from the mucus membrane and sanguineous suffusion into the serous cavities, such as the pleura or pericardium. Pulmonary infarcts are sometimes produced, also hemorrhage of the kidneys with albuminuria or hematuria. The lesions which may be more or less severe may last for several days and then slowly disappear, after a period of true convalescence. In many cases, however, they leave behind them traces which last for months and even years, affecting the health of the patient more or less seriously according to the region of the body involved. In certain cases of domestic animals being bitten and more rarely in man, after recovery from the bite of a viper, total or partial loss of sight, smell or hearing has been observed. Such results, however, are exceptional.

Sir Thomas Fraser states that: "In all cases where the blood forms a firm coagulum after death the poison is that of the colubridae. And in all cases where it remains perfectly fluid after death the bite has been inflicted by a snake of the order of the viperidae." We may take the *naja tripudens* as heading the list of those acting on the blood in such manner as to cause coagulum, and the *crotalus* as the synonym of the opposite class whose action produces permanent fluidity. It is probable that the action of all other snake poisons range between the two extremes.

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PRE-CANCEROUS CONDITIONS.

BY

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MALIGNANT diseases have attracted attention from earliest times. They have long been recognized as possessing distinctive characteristics quite apart from ordinary diseased conditions. It is but natural, therefore, that a host of theories should have been advanced to explain their cause, and, as many of the histories of cancer will show, the dominant medical thought of the times was in each instance applied in their attempted explanation. In fact, in the treatises on cancer we may read the history of dominant medical thought. But in spite of innumerable observations through the centuries, and despite an amount of investigation of vast proportions, the net results have been but minimal. In conformity with the conviction that the matter could not be cleared up by individual and isolated efforts, and possibly because of the success attending similar study of tuberculosis, about fifteen years ago witnessed the inauguration of well organized and highly endowed institutions devoted to the study of malignant diseases, and we behold the modern cancer research. Since then the organized effort put forth to determine the etiology of malignant diseases is without parallel in the history of medicine.

But what has been accomplished during these fifteen years of colossal endeavor? Those who have given the matter any attention know that the question cannot be answered in a word.

It would be far from the truth to say that nothing has been accomplished, though it must be admitted that the primary purpose has not been attained; that we are as far as ever therefrom is not just accurate. The results of modern cancer research have been variously appraised, but as Bainbridge has pointed out (*Med. Record*, 1906, Sept.) they have been largely those of negation, or, as we might say, the ground has been cleared. Many theories of etiology have been disposed of; many therapeutic agents have been proven efficient; much technical knowledge has been acquired; many facts concerning the life history have been established once for all; and much other information, attainable only by laboratory methods, has been accumulated. As many of you know, the matters here referred to form an extensive chapter in medical literature.

Among the facts which become conspicuous when we approach the study of cancer, which was not distinctively nor even primarily pointed out by laboratory research, is that one observation, made many years ago, that malignant disease commonly follows other pre-existing diseased conditions. The study of this fact, which the cancer problem presents ought to be fruitful of results, and so it has received some attention. Thus von Bergmann (*Berlin. Kl. Wochenschr.*, 1905, No. 30) has pointed out that the thought of a chronic, long continued irritation may be a cause of cancer is a very old one. He says in 1823 Hey suggested that cancer of the penis occurs in those long afflicted with phymosis. While this is not altogether correct, it verifies the statement made. In 1835 Hawkins called attention to the development of cancer from scars, especially in English sailors who had been subjected to barbarous punishment. In 1873 von Bergmann observed a patient who, when four years old, had been extensively burned by falling into a stove. Forty years later a cancer developed upon the scarred area and involved most of the chest and abdomen. About 1874 came Paget's work concerning the disease of the breast with which his name is identified. It is quite probable that this work called definite attention to and certainly emphasized the fact that certain skin lesions undergo malignant degeneration or precede cancerous diseases. In 1875 Volkmann described the cancer which developed from the acne and eczema affecting workers in paraffin. The necessity for frequently cleansing all chimneys, encrusted with soot from the universally used wood fuel, induced many cases of cancer in chimney-sweeps; and this occur-

rence is said to have been first described at the end of the eighteenth century by Pott. Cancerous disease has also been observed in those working in tar—and a curious and interesting instance of this is the cancer of the mouth appearing in North sea fishermen who often have occasion to hold their tarred nets and lines in their mouth. But a disease, commonly leading to cancer, which upset theories and has ever excited interest, is xeroderma pigmentosum, to be again referred to. Here is a disease leading to diffused carcinosis, and moreover evidently transmitted by heredity, let us say. And so we come to more modern times, characterized by diligent research and organized observation. Here also we encounter new avocational pre-cancerous conditions.

Before going farther, permit me to say without any intention of arguing the matter or even presenting the evidence, that my belief is the indications at present point to the great likelihood of malignant diseases being caused by an influence external to the body, probably of micro-organic origin, and this view may be held without violence to the evidence at hand. Laboratory workers notoriously deny this, and they are not always above the suspicion that this opinion is based largely upon the fact that it is unproven. However, Roswell Park, I believe, steadfastly maintained this view, and it is steadily gaining ground among those who are not solely concerned with cancer from its experimental side. The subject of this digression is mentioned at this point for the purpose of indicating how this extraneous cause of cancer runs like a distinctive thread through the whole design made up of our present knowledge of malignant diseases. If we frankly accept this view our line of thought is at least facilitated and may lead to its proper goal, whereas if we deny it a vast amount of circumlocution becomes necessary.

From the observations above mentioned it has become possible in some measure to formulate our knowledge as Hansemann and others have done. Hansemann (*Zeitschr. f. G. u. G.* 74, 1, 149) and others have shown that the development of cancer is the result of (or should we say, it often follows) prolonged irritation of some sort, either mechanical, chemical, thermic, X-ray, actinic or bacterial. In some instances the irritation has continued for many years as in scar cancers, and in X-ray cancers the irritation may only be of some months duration. But we should ever remember that of the many cases of

chronic irritation relatively few actually develop cancer. This, says Hansemann, indicates with absolute certainty that besides chronic irritation still another influence must act, for which heretofore we have no other term than individual predisposition. This may be hereditary or acquired after birth, as in the case of xeroderma pigmentosum. Leg ulcer becoming cancerous is thought to illustrate an acquired disposition. According to Hansemann a carcinoma cannot forthwith arise from chronic irritation but a change in cell character is necessary, which he has described as anaplasia. Winter (*Veit's Handbuch*, III, II, I., 205) has favorably reviewed this work and has shown how the early changes in cervical cancer are in accord therewith.

Aside from these anaplastic epithelial changes, most authors agree and many observations tend to prove that there are other, let us say, more gross tissue changes, so that cancer does not develop from normal tissue, and this consideration is of the highest importance in prophylaxis. Thiersch's theory, that of Ribbert in part, and the same idea in the theories of others, are based upon this observation. Briefly stated, according to these views, the primary change in cancer takes place in the subjacent connective tissue which presents a diminished reaction to the overlying epithelium, because of which the cells may dip into the tissue beneath them and multiply without restraint. Whatever may be said for or against these theories it is certain that many, perhaps most malignant diseases are preceded by gross or minute alterations of tissue.

These conditions of prolonged irritation, of chronic inflammation, of long existing tissue change and of old injuries, which ultimate in hyperplasia and atypical epithelial proliferations, are attracting much attention, since as already said, they precede malignant diseases. In this respect only may we speak of a pre-cancerous condition or disease, namely to indicate that the condition or disease is often an antecedent of cancer. It is probably incorrect to speak of a pre-cancerous *stage*. The experience of Butlin (*Br. Med. Jr.*, May 26, 1906) in cancer of the tongue is instructive, for at one time he believed that during a prolonged period the disease was in a benign stage, and his frank acknowledgment of error reflects much credit upon him. The point, of much importance from its scientific side, is of vast import from an every-day, practical standpoint, because it touches upon the great responsibility of the general practitioner

in making a diagnosis, and in early reference of the patient for operation. Let us remember that when the first cell has proliferated atypically, stimulated thereto by innate perverseness or because of an extraneous influence, according to whichever view we happen to incline—let us remember that the patient has a cancer. She has a cancer long before the mass has the size of a pea; by the time the mass can be recognized by the finger millions of cells are cancerous; and when she has pain, hemorrhage, ichorous discharge and cachexia, her doom is sealed.

It therefore behooves us to know under what conditions cancer may be expected. To be taken unawares has ever been the fatal psychological state in human affairs; and to find frequently what one is seeking is a common experience, whether in geology, or in botany, or in medicine and surgery. Let us remember also, as Hansemann has said, it would be wrong to suppose that in every single case of cancer a pre-cancerous disease must pre-exist. On the other hand most authors seem to be assured that cancer does not start from healthy tissue. Bloodgood (*G. S. and O.*, XVIII, 1, Jan., 1914) has given attention to this point and has studied how very often cancer supervenes in benign lesions, and yet not always. Crile (*vide infra*) believes that every cancer was preceded by a pre-cancerous lesion. Bainbridge has doubtlessly correctly stated that many of the conditions which come under the category of pre-cancerous lesions, when not subjected to repeated acute traumatism or to chronic irritation, give no trouble in healthy persons whose lives are regulated on a well ordered plane. When the conditions are otherwise they of course become a source of danger. Here also it would be well to bear in mind Hansemann's pertinent suggestion that we must be cautious in our thinking to keep separate the conditions under which the disease may arise, and not confound them with the cause and its action.

If then chronic irritation be such an important factor in the development of malignant disease, the question of what relation exists between the two conditions, is of the utmost importance. The answer forms one of the many subjects of inquiry of modern cancer research, and until now there has been given no satisfactory reply. It has often been said that cancer has many of the characteristics of a slow infection, particularly by Carr of late (*vide infra*), and many who have studied cancer in a broad way frankly believe it to be due to an infection. Its clinical course certainly indicates such an origin, and for those who

favor this view concerning chronic irritation, which of course is associated with a broken surface, the chronically irritated surface simply represents a port of entrance, open for years, presenting constantly the opportunity for entrance of an extraneous agent, which when once effective stimulates the cells to wild and unrestrained proliferation. Certain it is this mode of origin, as yet unproven, would explain the clinical course and the histological picture of malignant disease. In the absence of this much desired proof, we must have recourse to anaplasia and metaplasia and other propositions. In this connection might be mentioned the suggestion of Carr (*S. G. and O.*, Vol. XVII 4, 400, Oct., 1913) which is a distinct contribution to the point now under discussion. He says three explanations of the origin of cancer seem possible in the light of our present knowledge: (1) Destruction or alteration of the normal nerve supply of the cells; (2) intoxication of the cells by bacterial or other poisons; (3) alteration of the food supply of the cells in question. The author beautifully enlarges upon these three points in his instructive paper, which, however, cannot be further reviewed for lack of time. But his interesting observation deserves mention, namely, that there exists a predisposing or pre-cancerous condition of the body in general which is characterized by soft, swollen mucous membranes, spongy, receding gums, loose lower incisor teeth with tartar on them, chronic bronchitis, thick, brittle nails, alternate constipation and diarrhoea, diminished pain sense and temperature sense; cervix flabby and of a peculiar pale yellow color. He emphasizes pre-senility and in this respect he differs from a recent English author who has shown that cancer mostly occurs at a time immediately following the period of greatest weight of the individual. This agrees with the frequent observation that women in blooming health are very often attacked by malignant diseases.

Besides chronic irritation, the most frequent pre-cancerous state is that induced by uncleanness. Now the uncleanness must be local, and not simply that of general unsanitary surroundings. This is contrary to what we might be led to believe, and not at all in accord with what is sometimes glibly said, that cancerous diseases mostly occur amid unhygienic surroundings. These diseases on the contrary have been found to prevail not more frequently among the poorer classes, uncleanness being said to be the privilege of poverty, but among the well-to-do and in the better parts of the city.

A local uncleanness, almost classic, is that inducing chimney-sweeps cancer, said to have been first described by Pott in 1775. The disease affects the scrotum and seems to be due to some cause associated with the chronic irritation induced by the collection of soot in the folds of the scrotum and upon the perineum. A chronic dermatitis develops there or a tubercular or warty growth appears which later may enlarge upon the surface and at the same time involve the subjacent structures. Fissuring, ulceration, and cancerous degeneration are the later stages, together with involvement of the inguinal and pelvic glands. A remarkable fact is that the disease at one time was more prevalent in England than upon the Continent, by reason of greater cleanliness and manner of dress in the latter countries; and also the fact that at present the disease is relatively rare on the Continent on account of the strict legal requirements respecting cleanliness and protecting arrangement of the clothing on the part of those engaged in this pursuit.

The cancers occurring in those working in coal tar and paraffin were first described by Volkmann in 1875 and in the following year by Bell of Edinburg. In these cases the skin of the forearm and hands become dry and thickened, the glands of the skin become occluded and an acne is produced, with the later occurrence of warty growths which undergo malignant degeneration. Here also it is interesting to note that the stringent laws enacted for the improvement of sanitation at the works and the legally required personal protection by means of clothing have materially diminished the occurrence of the disease.

But apart from uncleanness, arsenic and aniline cause an irritation upon which malignant degeneration often supervenes. In the case of arsenic, warty lesions are produced, quite different from the dermatitis and diffused irritation occasioned by the use of so many articles common to our modern life. These lesions are in the nature of a keratosis, and have been fully described by Fowler (quoted by Bowen). Aniline, however, causes papillomatous growths in the bladder, which later undergo malignant degeneration.

Under irritation induced by scars and subsequent tissue changes must be classed the scar cancer in sailors. Here is another pre-cancerous condition which may properly be called classical—and what a disgraceful commentary upon our boasted developing civilization! Think of a class of men habitually

and traditionally subjected to the barbarous and inhuman torture of flogging, so that their experiences have found a place in medical literature. We learn that the backs of these men were often mutilated by a meshwork of finger-thick scars whereon cancer became engrafted. But scars from other causes have often shown the same tendency, notably those from burns and such as remain after ulceration.

Upon the lower extremities cancer is rare except as subsequent to a scar or chronic ulceration. In fact v. Bergmann has never seen cancer in this locality except with such a previous history. But crural ulcer is common, and the prolonged exposure of an open wound together with the persistent attempts at healing of both connective and dermal tissues furnish the well known local pre-cancerous environment.

Here might be mentioned the Kangri cancer of Kashmir. This has been fully described by Dr. Ernest F. Neve (*Br. Med. Jr.*, Sept. 3, 1910, 589) and has been further discussed by Bashford (3d Report Imperial Cancer Research Fund, 1908). The lesion is due to the curious custom of the natives of Kashmir of carrying beneath their clothing a charcoal fire in an earthen vessel, called a Kangri, enclosed in a basket. This basket is in contact with the abdomen when the wearer is standing, and when squatting the lower part of the thigh and upper part of the leg come into frequent contact with the heated receptacle, and these places are often subjected to great heat and are frequently burned. Neve has described and illustrated three forms of malignant disease, epitheliomatous in character, a raised, an excavated and a mixed type. Ulcerations often occur with later involvement of the neighboring glands.

As a curious locality for cancerous degeneration may be mentioned in passing, at the base of the right horn of cattle in India, this locality being subjected to prolonged irritation from the custom of harnessing the draft animal by its right horn to the wagon.

A large group of conditions preceding cancer may be properly classed as due to local irritation, and they are situated in almost every part of the body. In fact both Bloodgood (*Jr. A. M. A.*, Dec. 27, 1913) and Crile (*Jr. A. M. A.*, June 6, 1908, page 1883) say that there is scarcely an instance of a complete account of a case of visible cancer that does not give a clear pre-cancerous history—a history of chronic irritation, ulcer, scar, hyperplasia, innocent tumor, or a combination of these factors.

Here a large chapter in the history of cancer is opened, but of course the present occasion admits of but a reference to some of the commonest instances.

One of the best known forms is that of smoker's lip cancer, in those addicted to the use of the clay pipe, whose stem is often short, and hence frequently becomes heated. The mouthpiece is, moreover, not always clean. Less frequently seen is the cancer of the tongue in those who use cigarettes in excess. Of cancers in the mouth that produced by the irritation of an old tooth is well known. Tuberculosis, syphilis, and leukoplakia have seemed to predispose to cancer. The latter disease especially has been studied in this connection. In the oesophagus cancer is found, and curiously enough almost exclusively in males. This strange fact has been attributed to the more common use of highly seasoned foods, of too hot food, and especially of distilled alcoholics, particularly when undiluted. Cancer of the stomach is receiving much attention of late. It is often found engrafted upon the site of an ulcer of the stomach, and while some writers exaggerate the frequency of this origin, Bashford has shown that gastric ulcer is by no means so frequent a predecessor of cancer as commonly believed. In addition to chronic irritation from spices and distilled alcoholics the swallowing of hot food in large pieces like pieces of hot meat or of potato, which cause local burns, is particularly emphasized by v. Hansemann. In India and China the cause is ascribed to the eating of hot rice. In the gall bladder cancer is often encountered, and that chronic cholecystitis may long exist we have learned to know comparatively recently; modern surgical experience has also taught that cancer of this organ is often associated with gall stones. Cancer of the liver is, of course, a common finding in the form of metastasis, but of the so-called benign growths, adenoma of the liver is apt to undergo carcinomatous changes. Czerny says adenoma of the kidney does not have this tendency, and the fact is emphasized by those who incline toward the extraneous origin of cancer, the difference regarding exposure to infection of the blood supply being the explanation proposed. Intestinal polypi are found in association with cancer in this locality, and cancer of the colon is believed to have a relation to chronic constipation. In the rectum and about the anus ideal conditions exist for malignant disease. In addition to chronic constipation and injury from the passage of inspissated scybala, this part

of the alimentary tract is notoriously prone to hemorrhoidal conditions; and rhagades, fissures and fistulæ present all the prerequisites of cancer, such as an open wound, frequent exposure to infection, hyperplasia, constantly interrupted attempts at healing with all their attending changes in cell character. Similar conditions attend hypertrophy of the prostate especially in its catheter stage, though I am under the impression that sarcoma is rather more common than carcinoma. But carcinoma occurs in the bladder especially as a degeneration of the papilloma found in the workers in aniline.

Cancer of the breast merits much more attention than can be given at present. This gland is the site of almost every known neoplasm, and almost every known new growth has its malignant type. The questions of a subsequent cancerous change or a primary malignant disease especially when small, or even whether the new growth is malignant at all, have furnished occasions for disagreement among pathologists. The scars from a long forgotten mastitis doubtless give opportunity for otherwise unexplainable chronic irritation. Many cases of malignant disease have a history of traumatism, and to that we must add a submammary fracture of the rib. Paget's disease will be referred to again.

Cancer of the uterus is a subject by itself. The uterus as an organ of the body is unique in regard to the extent of tissue change, both in respect to amount and character, which in the course of its physiological life, may take place in it. The injuries and harmful influences to which it is exposed also place the organ in a class by itself. That this organ is peculiarly prone to malignant disease is not surprising, nor is the fact that more cases of carcinoma occur in the female genitalia than elsewhere in the body.

In the ovaries, carcinoma is frequently seen as a metastasis, but the germinal gland is normally required to undergo such pronounced histological alterations that not so long ago the question was in debate as to just what did constitute a normal ovary. The benign tumors found in this organ are subject to both sarcomatous and carcinomatous degeneration. This is particularly true of the interesting cystic tumors of the ovary. Moreover, while some of them may be classed histologically as benign, yet we say they are clinically malignant. Dermoid cysts and teratomata are clinically bad enough in themselves.

without offering the numerous varieties of tissue for malignant degeneration, as they do.

The skin is frequently the site of malignant manifestations. From their location the opportunity for close and early study is presented, both from macroscopic observation in the living, and from histological examination after relatively early removal. In fact the opportunities for the study of malignant processes are so freed from the difficulties which attend it when elsewhere situated that Bowen (Jr. C. Dis., Vol. 30, page 241) endorses Ribbert's statement that it is to the skin we must look for the beginnings of cancer, and from the cutaneous changes the latter author has drawn his most important conclusions and based his conceptions of the mode of origin of malignant epithelial growths. As Bowen has pointed out the following general findings are common to pre-cancerous dermatoses: a slowly increasing epithelial hypertrophy, characterized by a hyperkeratosis (except in Paget's disease) well marked as a rule, and showing itself as one of the earlier clinical manifestations; by a pronounced proliferation of the rete Malpighii, and accompanied by karyokinetic figures; and by a vacuolization and degenerative changes in the epithelial cells, that are more or less characteristic. Connective tissue changes are apparently present in all, but except in the case of X-ray dermatitis, their features have not been so prominently mentioned.

While it is impossible to examine at length these important pre-cancerous dermatoses, they do merit more than a passing word. Warts and nævi are among the commonest skin lesions, and have attracted much attention. But the common wart is not usually predisposed to malignant degeneration, while this is true of the congenital wart. So of moles, the pigmented mole possesses the pernicious tendency, while the others do not. Keen has written concerning these lesions and years ago called attention to the danger of allowing them to remain untreated. The cornu cutaneum is not common and is rather a curiosity, although it is apt to degenerate.

To keratosis senilis, Bowen has referred as *the* pre-cancerous dermatitis *par excellence*. It is a very common lesion and is characterized by senile changes affecting the skin. These are manifested by attenuation of the derma, pigmented spots, seborrhœic warts, greasy scaly patches, and small hard areas of thickened epidermis, often yellowish. In the course of the

disease various changes occur, among which are abrasions and superficial ulceration and circumscribed seborrheic processes. From such a degenerative seborrheic patch epithelioma or rodent ulcer develops.

Keratosis follicularis or Darier's disease is comparatively rare, but it has much of interest from our present point of view. In his study of the disease Darier believed he had found its cause in bodies resembling coccidia, which suggested the name psorospermiosis. Subsequently, however, Bowen, confirmed by others, showed that this apparent micro-organic life was not really such, but the bodies presenting these appearances contained kerato-hyalin and hence represented cell transformations. The disease appears on the head and face, and at first consists of greasy or dry brown papules, containing in their center a hardened or greasy plug. The disease is slow in its course, but gradually spreads and after a few years may become generalized, affecting, in addition to its primary seat, several other parts of the body. It is of interest to us since the psorosperm theory was disproven, that it is now concluded that the disease presents "a type of dyskeratosis associated with a peculiar cellular degeneration which may affect any portion of the epidermis, and is frequently located at the upper third of the pilo-sebaceous follicle or the opening of the sweat ducts." In this respect it presents a lesion somewhat similar to processes taking place upon the cervix uteri, as shall be shown on another occasion.

Xeroderma pigmentosum is an extremely interesting dermal lesion. Our knowledge of it dates only from 1870, and some eighty cases have been observed. Its interest lies not alone in its malignant degenerative tendency, but also that it appears to be hereditary, since it also affects young children of one or two years and often when only five or six months old. Whether or not under these circumstances we should use the term contagious or infectious instead of hereditary is an open question suggested by our later knowledge in this respect of tuberculosis in children. Stelwagon's descriptive definition is: A malignant disease, usually developing in early life, characterized primarily by freckle-like spots, especially upon exposed surfaces, followed by telangiectases, atrophic changes, angiomatous and verrucous lesions, with increased pigmentary deposit, and finally, generally after some years, by epitheliomatous growths and fatal ending. The primary freckles of this disease and

their appearance on areas exposed to the action of the sun have suggested the still debated question of sunlight as an etiological factor; but one author has pointed out that all sunburns do not lead to cancer, and so, reasons he, another factor must be added.

This disease and these considerations suggest X-ray dermatitis. That the excessive action or some coincident action of a highly valuable agent in the treatment of cancer should excite the disease which it does so much to ameliorate, was a fact which startled medical circles some years ago, and since then we know of not a few names numbered among the martyrs whom the medical profession has given in the cause of humanity.

X-ray causes erythema resembling sunburn as a first effect, with vesiculation in some cases. Slight exfoliation may follow the erythema. This may later be succeeded by the appearance of brown freckles and a general pigmentation of the skin. Occasionally telangectases appear. After frequent exposure the erythema and scaliness persist, with pigmentation and atrophic changes in the skin. In some instances a keratosis develops, and it is this which becomes transformed into carcinoma. The same is true of the more serious effects of X-ray, i. e., when a slough or ulcer forms. When this occurs the ulcer is shallow, sluggish, having its border inflamed and shows very little inclination to heal. Without going into the more minute changes, which, however, have been closely studied, enough has been said to indicate that the X-ray may produce a dangerous pre-cancerous condition.

In Paget's disease is presented another pre-cancerous condition—in fact, since this disease was first studied in 1874, the observations of a number of cases seems to indicate that the disease is malignant from the first. It appears as an eczematous process affecting the nipple, but especially the region of the areola of the female breast. From this region it may spread and involve the contiguous skin. The affected area is sharply defined, intensely red, and presents a raw, irritated and granular surface, covered by a viscid or serous exudate. The underlying skin is of course infiltrated, and this is one of its chief diagnostic signs. After the disease has existed for a time, varying from generally two to twenty years in some cases, there is retraction of the nipple with well developed carcinoma and gland involvement. Some day we may know why there is

a predilection for the right breast of women, but at present we can only state the fact. But this disease is not limited to the female breast; it has been found in males, and upon the scrotum among other places, and hence, some authors speak of extra-mammary Paget's disease.

In the short time remaining at my disposal I wish to present some entirely different considerations relative to pre-cancerous conditions, namely, those associated with parasitic and micro-organic life. The disfiguring processes of lupus notoriously tend to malignant degeneration; and the same is true to a less extent in syphilis. Here the micro-organisms are well known. Of the grosser varieties of lower forms of life, intestinal parasites have often been justly charged with originating malignant disease, perhaps by reason of the chronic irritation induced. This is so commonly true of *Bilharzia hæmatobia* that reference thereto is usually made in most articles on cancer of the bladder. In fact, the association of Bilharz disease and cancer is spoken of as classic. Instances are rapidly multiplying of observations of malignant tumors, especially in the lower animals, which arose in association with nematode and other worms. Such facts are among the many which suggest the existence of possible carriers of cancer. If such could be found without any doubt, they might be the carrier of one of the stages of life of a micro-organism or of a toxin derived from it, and the ever-recurring question of why the proliferation and atypical growth in malignant diseases occur would be solved. Possibly the answer may ultimately be furnished by results obtained along quite other lines of research. In this respect history may repeat itself in cancer as was true of Pasteur's work. Pasteur's great achievements in reference to infection were subsequent results from his original investigations of the so-called diseases of wine.

It has long been known that goiter often becomes malignant, and this is not strange when we regard its histological and pathological structure, but of late years goiter has attracted much attention for itself—but it is not my purpose to open that great chapter on the etiology of goiter, but simply to call attention to a few facts developed in the course of recent investigations, and particularly such as become prominent or acquired a new significance from the studies of Gaylord and Marsh of carcinoma of the thyroid in the salmonoid fishes. As is more or less generally known, there have been some quite suggestive

facts developed from the study of tumor formations in plants and trees, and especially of thyroid disease in brook trout.

Marianne Plehn has shown that this gill disease or throat tumor, of which "red floor" is the first evidence, affecting trout and similar fish, is carcinoma of the thyroid, and is intimately associated with enlargement of the thyroid or goiter. From Gaylord's and Marsh's splendid work on this subject it appears that at the hatchery young fish may become infected from water flowing from a pond in which an epidemic appeared. They found the contagion could be localized to single troughs, and these troughs can retain their infectivity from year to year. They say also that since the infected fish had not come into direct contact with others, the infectious nature of this form of cancer is strongly indicated; and also that the contagion is waterborne. When water from these troughs, particularly when containing scrapings from the troughs, was given to dogs, they developed in five months an enlargement of the thyroid gland. No such change appeared in other dogs who were given the same water boiled.

At present it is not possible to further review the new facts relating to goiter, but the conclusions of McCarrison might be mentioned. He believes to have shown that goiter is due to matter in suspension in water; that goiter is not due to the mineral but to the living part of the suspended matter; in other words, to a living organism of the disease; and that the incubation period of experimentally produced goiter is thirteen to fifteen days.

Now, in conclusion, I want to make two quotations, and allow them to stand without further comment: Concerning possible carriers of carcinoma in trout Gaylord and Marsh say: "In a disease like carcinoma of the thyroid in the Salmonidæ, which is not transmitted directly from individual to individual but which is transmitted, if at all, from the infected to the healthy by some roundabout method, the idea of carriers for the agent which we believe to be the cause of the disease is very natural. Of the recent experimenters with goiter water, Bircher, as a result of filtration experiments, for some time advocated the view that the agent of goiter was a colloid toxin, probably liberated by some parasite incapable of passing the Berkfeld filter. The residues scraped from such filters produced in young animals very profound nutritional changes comparable to cretinism. The filterable factor which produces the

nodular adenomatous form of goiter, as well as the parenchymatous hyperplastic, will not pass through the membrane of a dialyzer, but the residue upon the dialyzer membrane proved to be particularly active. These observations have led Bircher to the belief that the agent is a colloid, but he recognizes that it may also be a filterable micro-organism; or that if the organism itself does not pass the filter it is still the probable source of a filterable toxin."

Finally, the second quotation to which I invite your attention is: "That a virus of cancer is no longer hypothetical has been shown by the recent demonstration by Peyton Rous in three varieties of sarcoma in chickens of a filterable virus capable of producing type-true neoplasms. This agent passes through a medium grade Berkefeld filter. It is preserved in glycerin, has a killing point slightly higher than the cells of the chick, is not injured by freezing, and is killed by 55° C. The agent can be preserved by drying the cells and can withstand grinding. After many months the agent can be separated from the dried cells by filtration, or, in common with them, in injection inaugurates at the point of trauma the growth of a malignant sarcoma of the type from which the virus has been taken. Rous has separated the filterable virus from a spindle-celled sarcoma, an osteo-chondro-sarcoma, and a spindle-celled sarcoma with peculiar arrangement of the cells. The virus of the osteo-chondro-sarcoma possesses the remarkable quality of causing the connective tissue with which it comes in contact to proliferate and specialize by forming cartilage and bone. His experiments not only show the existence in these tumors of a filterable virus but the existence for each type of a special virus. It is needless to point out that the agent of goiter is also filterable, which fact should strengthen the theory that the goiter agent is a living organism and not a soluble toxin."

PYELOGRAPHY NOT WITHOUT DANGER.—Albrecht (Munich) in writing about the dangers of pyelography reports having witnessed serious consequences after injecting with exact technique a 10 per cent. solution of col-largol. Acute uremia, great pain, serious systemic disturbances and suppression of urine for two days were seen. These symptoms disappeared in the course of a week. It appears that such results are apt to occur in cases of hydronephrosis, and therefore in this condition pyelography seems to be contraindicated because of the entrance of the solution into the dilated urinary canals and because of the defective resistance of the renal parenchyma.—*Monatsschr. f. Geb. u. Gyn.* Vol. 40, p. 624.

CONSERVATISM IN RECTAL DISEASES.

BY

HARRY BURDSALL ADAMS, M.D., PHILADELPHIA.

I WAS prompted to take this for my subject after personally witnessing for the past five years what gratifying results may be obtained by conservative measures in pathological conditions of the rectum.

We have been burdened by vast literature decrying conservatism and telling of its ill-effects especially in the ambulant treatment of hæmorrhoids. We have heard of the thrombotic conditions and sloughs following the injection method and reports come from men who are authorities on the subject of radical treatment; but I am sure they have not given the injection method a fair trial or there has been some fault in their technique.

Thrombotic conditions never occur if the operator follows the proper course and as for sloughs I have seen just one in several hundred cases; this being a case complicated by an inoperable carcinoma of the upper part of the rectum and lower third of the sigmoid. Suppose a slough should occur, we will admit the patient suffers some pain, but does he suffer as much as he would after the clamp and cautery or ligature method? We have instead of a slough numerous raw areas which have been partially sealed by the cautery. It is impossible though to seal up entirely the mucous membrane for after releasing the clamp you will find oozing areas. Or in the case of the ligature method you will have numerous sloughs. Then again the mental effect. The thought of hospital spells suffering to almost all of the laity. They are laid up for at least five days and it is two weeks before they are again able to perform their daily duties. This means quite a loss to most men together with the added cost of the hospital, and the financial end needs consideration i. e., in most cases and your clientele will be thankful for the same. But right here let me utter a warning. Quite a few have tried this method and thrown it aside, others have been over-zealous and followed it in all cases with detrimental results. Why? Simply because they do not possess the knowledge to discriminate in which cases it was applicable. I have here appended a few cardinal points. First, never inject a fi-

brous tumor; second, never inject with an irritable sphincter; third, never inject in an area over the sphincter; fourth, never inject an external pile. Right here let us dispose of the external hæmorrhoid or thrombi, the diagnosis being made, treat by incision and evacuation of the clot, pack and treat as any other open wound. In considering internal hæmorrhoids there are three varieties: 1, arterial, which is seldom found, readily diagnosed by the pulsations; 2, capillary, discerned by their predisposition to bleed on the least manipulation and being, as a rule, quite small unless complicated by some other condition—these varieties should not be injected; 3, venous, a varicosity of the middle hæmorrhoidal vessel—this is the variety which we will usually encounter. Now, given a case of internal hæmorrhoids, our first object will be to search out the etiology; having found same, our next course is to correct it, whether it be due to displacement of the uterus, malignant disease, obstruction of the portal circulation, pregnancy, tumors or constipation, etc. In this paper we will simply deal with those cases amenable to the ambulant treatment. Here the cause will be frequently found to be due to constipation with an associated irritable sphincter muscle. How will we relieve this obstruction to the circulation? It is most easily remedied and I think the ideal way is by digital manipulation under nitrous-oxide anaesthesia. By this method you do not take the chance of tearing your muscle and rendering the patient incontinent as might happen with a metal instrument. For your sense of touch immediately informs you when the muscle relaxes. Our object therefore is to simply destroy its irritability and still allow it to perform its physiological functions. This being completed you will inform your patient to rest easily for the next twelve to twenty-four hours, advising him to use sedative measures. Let him report to you in three or four days for treatment. On inspection you will find the congestion entirely relieved with a marked laxity of the rectal mucosa. What you desire now is a vehicle to support this flabbiness and we have just what we need in the injection method. After introducing the speculum and cleansing field with an antiseptic, expose one of the tumors and introduce your solution into the sub-mucous tissue just without the sheath of the vein. Your solution matters little as long as it has a mild inflammatory action. The main point to observe is to inject the fluid into the sub-mucous tissue and not into the vein, for if the latter should happen it would be

carried off into the circulation with grave dangers of a thrombus being formed and here is just where so many have erred and brought about censure upon this method. This has been practiced at times by those who have never looked upon the rectal mucosa before, with dire results. But could you expect anything else? Would any of you expect to remove an appendix if you had never seen an appendectomy? Would you undertake it, if you knew nothing of abdominal surgery? Therefore, as every other method does, it requires experience and knowledge of the anatomy of the part. Now one may ask, why does this cure? First, your injection is a mild irritant and it produces the formation of a plastic exudate and increase of leucocytes to the injured vessel, the exudate will consequently splint our vessel and there will be a gradual contraction restoring it to its normal condition and our injured vein, as we all know, will surely be benefited by the leucocytosis. Is it not then far better to restore the natural position of these veins and to allow them to go on with their prescribed work, than to remove them from the anatomy and throw this extra burden on the remaining vessels? Let us now turn our attention to fistulas; probably 25 per cent. of our cases can be treated conservatively. This applies to sinuses which are straight and without bifurcations with one opening on the skin and one on the mucous membrane, and also to those cases in which you hesitate to inflict the injury necessary to cure by the knife. The former are readily cured by local anaesthesia incision and breaking up any fibrous bands which may be present and then treating as any other surgical wound. The latter by curetting, draining and stimulating to healthy action as would be used on any old sinus. We have yet to consider in a very brief way fissures and strictures. Fissures are usually readily cured by thorough divulsion of the sphincter with after cauterization depending on their inclination to heal. Strictures are usually the result of cancer or syphilis. Cancerous strictures are only treated ambulantly after the disease has progressed too far to be benefited by radical means. Many inoperables are kept comfortable by systematic bougieing and antiseptics. The syphilitic cases by the administration of K. I. mercury and salvarsan together with the indicated local treatment.

In concluding allow me to offer a plea for conservatism. Let me ask you to give it a fair trial and do not condemn it on the failures of the inexperienced.

REPORT OF A CASE OF COMPLETE ANURIA FOR SEVEN DAYS.

BY

JOS. H. BRYAN, M.D., ASBURY PARK, N. J.

MR. CHARLES I., age 64 years, letter-carrier for the past twenty-eight years, has been in good health, except for occasional attacks of rheumatism affecting his feet, or the lumbosacral region, and frequent micturition due to a slightly enlarged prostate, in conjunction with rheumatism.

He called me on the afternoon of January 17, 1915, stating that he was constipated, and had taken an enema of hot water in the morning, and after going out, felt chilly, and had pain in the left side of his abdomen, which was aggravated by standing erect or walking, and relieved by bending forward or lying down, the pain being cramp-like at times. I found his pulse normal in character and rate, and the temperature 99° by mouth. Examination of the abdomen, showed dullness in the left hypochondrium, and tenderness to deep pressure, in what I considered, the spleen. The bowels had acted after the enema, and he had urinated a few hours before. I prescribed Bryonia, 3x in water, a dose every two hours.

The next morning his temperature was normal, also his pulse, and his systolic blood-pressure was 150mm, but the tenderness to pressure on the left side was more pronounced, and the area of dullness slightly increased. He then stated he had not urinated since the preceding morning, nearly 24 hours. I examined the bladder by percussion, and found no evidences of urine there, and decided I had a case of suppression, due to the exposure of the day before. The skin was moist, and at times bathed in *profuse* perspiration, but with no odor. The patient refused food, except liquids in very small quantities. Prescription: Terebinth, 3x in water, dose, every hour.

The next, and third day, the temperature was 99° -4, pulse 84, and of good quality, but there was still complete anuria, with free perspiration. Hoping I might get a few drops of urine, I catheterized twice, but got nothing whatsoever. Hot water enemas and both dry and moist heat were applied over the loins. The tenderness was more pronounced both to mo-

tion and touch, and the area of dullness steadily increasing, extending from the border of the ribs, to the pelvis.

At my request, Dr. Laidlaw, of New York City, met me in the late afternoon of the fourth day, and during the history taking, a member of the family mentioned that two days before I was called, the patient had run for a train, jumping on while it was moving, and the patient then said he was forcibly thrown against the railing of the platform of the car, striking his left side, causing a sharp pain which had gradually disappeared.

Dr. Laidlaw then suggested after examining the patient, that it was a surgical case, with some obstruction resulting from the accident. In answer to my query as to the cause of the total absence of urine for more than four days, he stated that it might be due to sympathetic relations, that sympathetic suppression in the normal kidney sometimes had been noted.

The following day the patient was operated on by W. F. Honan, M.D., New York City, who found a badly lacerated kidney, with a large quantity of blood and urine, which was entirely post-peritoneal. He removed the kidney, and the patient was in excellent condition that day and the following, perspiring freely, mental condition normal, but still there was no urine.

The second day, about 50 hours after the operation, the patient was suddenly seized with an attack of faintness, and died. What was the cause of death?

Opportunity for discussion was given, but as no one responded, Dr. Bryan gave his conclusion as follows:

Being uncertain as to the real cause of death, and unable to explain the absence of urine both *before* and *after* the operation, I asked for the privilege of an autopsy, and a few hours after death, I made a post-mortem examination of the contents of the abdomen and pelvis, being assisted by Dr. Geis, the house physician. This examination fully developed the reason for the anuria: there was no right kidney, and no apparent entrance of a right ureter in the bladder.

I find that Ballowitz (Virchow's archives, August 5, 1895) has collected as far as possible, all the record cases of congenital absence of one kidney. Excluding cases of fused kidney, and partial atrophy of one kidney, he finds 213 cases of complete absence of one kidney, upon which he bases the

following conclusions: "Such deficiencies occur almost twice as often in males as females, a fact, however, which may be partially accounted for by the greater frequency in necropsies on males. As to age, 23 occurred in the foetus, or newly born, most having some other congenital deformity, especially imperforate anus. The rest were about evenly distributed up to 70 years of age, after which, only seven cases occurred.

Taking all cases together, the deficiency is more common on the left, than on the right side; but while in males, the left kidney is far more commonly absent than the right, in females, the two sides show the defect equally. The renal vessels were generally absent, as also the ureter, on the abnormal side (the latter in all except 15 cases), the suprarenal was missing in 31 cases.

The solitary kidney was almost always normal in shape and position, but much enlarged. Microscopically, the enlargement would seem to be due rather to hyperplasia, than to hypertrophy. The bladder, except for the absence of opening for one ureter, was generally normal. In a large number of cases, there were associated deformities of the organs, and these were almost invariably on the side of the renal defect; they affected the conducting portion much more than the glandular portion, that is, uterus, vagina, and fallopian tubes, in the female, and vas deferens or vesiculæ seminales, in the male, rather than the ovaries or testicles.

Finally, he points out the practical bearing of the subject, for example, the possibility of calculus, causing sudden suppression of urine, in such cases, and also, the danger of surgical interference, and suggests the possibility of diagnosing the condition by ascertaining the absence of the opening of one ureter in the bladder by means of the cystoscope, and also the likelihood of its occurring where any abnormality of the genital organs is found, especially if this be unilateral."

In the case under discussion, I asked the surgeon while operating, if it would be possible to explore the opposite renal region, but both he and the anæsthetist said the patient's condition would not warrant extension of the operation, but even though we *had*, and had *learned* of the absence of the right kidney, it would have made no difference in the outcome, as the lacerated kidney was so extensively injured, it would have been useless for functioning.

DIABETES INSIPIDUS.

BY

F. P. MCKINSTRY, M.D., WASHINGTON, N. J.

ON January 15, 1914, Mrs. M. aet. 51 informed me that she had lost about 40 lbs. in weight during the past year and that she had diabetes.

She had maintained an antidiabetic diet for several months. Upon examination of a specimen of the 24 hours urine the quantity was found to be between five to six pints (the night urine being 3 pints) without a *trace* of sugar or albumen but excess of phosphates. The case was regarded as a mild form of diabetes insipidus and the patient assured that she did not have diabetes. She was told to eat anything she wanted in moderation, including sugar and starches. I regarded her loss of weight as due chiefly to her long abstention from carbohydrates. She began at once to gain in weight and strength, and is now in her normal health.

Some years ago I had a more typical case in a male, 35 years of age, in which the urine was much more profuse and the specific gravity correspondingly low.

This case recovered after several months of treatment and remained well until an attack of pneumonia two years ago which caused his death.

Diabetes Insipidus is defined as "a chronic affection characterized by the passage of large quantities of normal urine of low specific gravity."

Mills is authority for the statement that as early as 1674 it was differentiated from true diabetes by Willis.

The disease is comparatively rare. Mitchell says he found less than six cases in 4000 cases examined for urinary troubles. The quantity of urine varies greatly and with it of course the specific gravity. From 10 to 20 pints in 24 hours is not unusual. Jones, a former president of the A. I. H., and Professor of Practice for many years at Cleveland Homœopathic Medical College, cites a case of his, in which 13 gallons were passed daily for some time. He also states that he has seen the disease several times as a late manifestation of syphilis. There is no special pathology. Tumors, injuries and inflammation in the vicinity of the medulla have caused it.

The cause of the polyuria is thought to be "a local dilation of the renal vessels through nervous influence."

The symptoms outside of the cardinal ones are very indefinite. My case just referred to had many symptoms, while my second was practically symptomless.

In regard to diagnosis we must carefully eliminate true diabetes, chronic interstitial nephritis and the polyuria of neurasthenia.

Of course the test for glucose must be applied irrespective of the specific gravity. We occasionally find sugar in urine of low specific gravity.

Interstitial nephritis may be recognized by casts, occasional traces of albumen but especially by the characteristic cardiovascular conditions.

The polyuria of neurasthenia is not constant.

Opinions as to prognosis vary. It seems to be favorable in cases devoid of pathological lesions.

TREATMENT.

Therapeutic suggestions from different authorities also vary greatly. Bartlett says: "The remedies that promise the best results are those of diuretic character and include Apocynum, Scilla, Strophanthus and Phos. Acid."

Hughes endorses Scilla very highly. In the case which forms the text for this paper Nux., Gels. and Spig. were used as indicated. In the other case Stroph. and Phos. Acid were given, following the plan of treatment suggested by Goodno.

CANCER OF THE BREAST.—Carl Beck, Chicago, recommends a more extensive operation than has been used in cases of extensive recurrent and hopeless cancer of the breast. The only thing generally thought best to do is to apply Roentgen rays or Coley's fluid and morphin. In the course of the last few years he has been able to save a few such cases by the operation of exarticulation of the whole shoulder girdle, including the clavicle, arm and scapula, with the plexus and vessels of the infected side, and the ribs, should they seem invaded by the carcinoma. It is a delicate as well as an extensive operation, and attended with great shock to a person who is not often in the best condition. Beck has done this operation eight times in nine years. All cases were desperate; some of the patients operated on several times and were all considered inoperable. The cases are reported, and two practical recoveries have been obtained, while another patient did well for three years before she was lost sight of.—*J. A. M. A.*, May 22.

THE CALL OF NATURE.

BY

FRANKLIN F. MASSEY, M.D., WERNERSVILLE, PA.

(Read before the Berks County Homœopathic Medical Society, June, 1915).

It is not always the person who will bring altogether new information to others who will really make them THINK and even ACT, but it is the one who will tell you something of which you know and then show you how to apply what you already know, who is really helping you along. A lecture, book or letter may give you many, many facts, and they might be of great interest to you, but it is far better to call attention to facts of which you already are aware and then SHOW you how to utilize them. To-day the world is going wild over NEW THINGS, whether in medicine or other walks of life, both business and professional. In so doing frequently some very important things are lost sight of entirely and something lost to humanity. Many articles have been written upon "Nature" but the idea of this paper is to call attention to some things concerning Nature—things of which you are aware, but perhaps have not considered in the same light as has the author, and having made the statements, it is hoped that there will be discussion, medical or literary. The topic will be headed "The Call of Nature."

Let us first endeavor to obtain a better understanding as to what Nature is. The word Nature comes from the Latin and means, generically—"to be born—to bring forth"—in other words Nature is the force that can give birth, bring forth, create. Although there is no object in starting a religious discussion on this paper, it may be well to try to understand what Nature is. The most devout Christian considers God as the Creator, the Almighty, etc.; the Jew considers none less than the Christian God as the Author of All; the agnostic recognizes the effects, but is uncertain as to causes, uncertain as to what to call the cause of the EFFECT, but he recognizes none the less cause and effect and therefore Nature; the atheist if such there really be, recognizes the effect and says that there is no God but all is NATURE. The agnostic is right in his second statement, but in the first he is incorrect, for as has been said, the

most devout Christian considers the CAUSE of all the wonderful laws of cause and effect to be due to God and therefore God must be to him Nature. With this settled—the fact that all creeds, Christian or otherwise must recognize the cause of things and if for no other reason give the cause some name. “Nature” we will call it and apply the word “Nature” as being the overruling something that governs life and its expressions. A good working definition for Nature is “A visible expression of the power of God working through the laws which He has ordained.”

There is a very appropriate poem that we may here insert, called “Each in His Own Tongue,” by William Herbert Caruth (Wolland & Co., Chicago):

A fire-mist and a planet,
A crystal and a cell,
A jelly-fish and a saurian,
And caves where the cave-men dwell:
Then a sense of law and beauty
And a face turned from the clod,—
Some call it Evolution
And others call it God.

A haze on the far horizon
The infinite, tender sky.
The ripe, rich tint of the cornfields,
And the wild geese sailing high
And all over upland and lowland
The charm of the golden-rod,—
Some of us call it Autumn,
And others call it God.

Like tides on a crescent sea-beach
When the moon is new and thin.
Into our hearts high yearnings
Come welling and surging in:
Come from the mystic ocean
Whose rim no foot has trod.—
Some of us call it longing,
And others call it God.

A picket frozen on duty,
A mother starved for her brood,
Socrates drinking the hemlock,
And Jesus on the rood;
And millions who, humble and nameless,
The straight, hard pathway plod,—
Some call it consecration,
And others call it God.

Nature has some things that she will demand of every living thing, but these things all come from a given source and for a given result. In all Nature the object is to perfect each and every species of living thing, to bring each to its highest form of development. Any interference with this will result in trouble of some sort. Grass seeks the best food that it can obtain in the ground but if it fails to get it or will not make the proper effort it will dry up and die. The lower animals and plants also seek their food in one way or another and failure upon their parts to do so will result in death. The higher up on the scale of life that one goes: the more things there are in the life of the being besides just simply living and reproducing, the more activities will be essential. At the highest point of the animal kingdom we have Man and it is with him that we will deal to-day. Man differs from other animals in that he has a soul and that possessing the soul there are more things expected and required of him, the more being required, and the fact that having the soul he has an intellect, will allow of more latitude in his actions, he is a free sentient being, capable of accomplishing what NATURE has planned that he should do, or doing what he really wants to do. It is with the idea of showing some of the things that Nature calls man to do and where he avoids or prevents what was intended, and perhaps indicate a remedy or so that might be useful that this paper is written.

If it be true that Nature has in mind the perfection or the maintenance of the highest type of each species, it must be true that the attributes belonging to living things must be taken care of and they be allowed to express themselves NORMALLY. The attributes of living things are—

1. Motion.
2. Metabolism.
3. Reproduction.

The higher on the plane of life, the more attributes there are, but these attributes above mentioned must be allowed expression or there will be difficulty in the form of disease or death. Thus there are other attributes in certain species, but these unnamed attributes may be placed under a subdivision of the above headings.

MOTION.

In the lower forms of life, motion is simply a means provided so as to facilitate the obtaining of nutriment. As we progress higher on the plane of life, it is for other things as well that motion is provided. Birds need it to avoid danger of attack and to meet the changes of climate as well as for the obtaining of food. The dog needs it for the reason that it must obtain food, and as it has other duties of which it is capable and everything that has a capability is meant to perform it and if it fails to perform its duty it will degenerate and even lose the power of doing other things. As the dog has a higher mentality than an amoeba, it has other requirements, and among them is the need of play or game. Therefore the dog must have a certain amount of ability to move so as to be able to play. As Man is a higher animal still, there are still other reasons why he should need and be able to move. Man excels in mind alone over the other animals and that being the case the better he keeps the mind, and the more that he improves it, the better developed he will be and healthier, for as has been said, the attributes of life, must be permitted to have expression if the health and life of the individual will be preserved. Therefore motion is necessary for man to obtain a broader view of life, to associate with others of his kind, etc. Motion in man comprises many kinds, the power of motion of the nerve cells, that of the muscles, not only of the limbs, but of the mouth, the tongue, (both in eating and speech) and other things. It is necessary that the brain cells of man be allowed to have motion in his development for man must go way beyond his immediate environments, he must travel in imagination if not in fact, he must visit in fiction if not in truth the homes of those of whom he is reading in history, novel or theatre. Therefore mental development in Man is a necessity and it depends upon motion of some sort.

METABOLISM.

Metabolism, as you know, is the name applied to embrace the various processes whereby food is changed into living material to become a part of the body and the waste thrown off. We will not in this paper take all of the considerations of the various sub-divisions of metabolism, but we will consider several of the processes or their allies. Let us include:

Mastication.

Gastric digestion.

Intestinal digestion.

Defecation.

Micturition.

Rest—(of cells, of heart, sleep).

Activity.

Mastication—

Every necessary or functional activity depends upon some other, thus to have a good gastric digestion, there must be a good mastication. The rule stated time and again by many people that there should be plenty of time taken for the purpose of mastication is a good one. The writer wishes to call attention to one fact that he has observed very frequently, and that is that it is NOT the length of time that it takes "to eat a meal" that counts, but HOW the meal is eaten. Thus he has seen a number of people who claimed that they would take such and such a length of time to eat a meal, and so they did, but they did not take the time to MASTICATE that they should have—they dilly-dallied with the meal and in several of these cases the writer was called upon to prescribe for diarrhoea in the summer and an investigation of the stool showed that there had been corn ingested but it was not DIGESTED and had acted as a foreign body, because the grain did not have the shell broken by the teeth and the digestive juices could not get in their best action. Please note THAT, fellow physicians when talking to your patients. On the other hand, I have known people who did not take long to their meals but when hurried or rushed, they ate something that could be properly prepared by digestion for the body and not swallowed whole. Mastication is a semi-mental process for it is governed by cranial nerves and therefore the mental attitude of the person should be taken into account when eating.

Every nerve in the body is in relation with each and

every other nerve in some manner and the effect upon one part of the body is felt at another part. The nerves themselves in the brain also are in touch with the sympathetic system and therefore there is always a reflex or sympathetic action to be taken into account. The action of the stomach as well as that of the intestines at least in part is governed by a cranial nerve associated with sympathetic ones, therefore a mental attitude will affect digestion by either making it and keeping it normal or by causing emotional actions and making digestion not what it should be. Therefore it is well to only eat when in the proper mental attitude. Any mental condition that will affect digestion will affect the whole system, for it is by digestion that we live, for without it the food would not be made into bodily tissues. It stands to reason that improper foods or those wrongly prepared will do damage to the digestive tract and hence the entire body.

Defecation—

The materials that are taken into the digestive tract and which cannot be, or are not, used by the body and digested or absorbed must be gotten rid of for they are undergoing in a measure the same processes that they would undergo if they were out of the body, in other words, they are decaying or putrifying. As the digestive tract is very susceptible to materials which are in an absorbable form, if any of these waste products (not in the body but of foreign materials as the food which we have eaten has become when we cannot use it or has had taken out of it what was needed for its use) are not gotten rid of, the body will absorb them and the blood become affected and as it goes to all parts of the body, every part of the body will feel the effect of this bad material which has been absorbed. Even the brain is affected by constipation, and when treating nervous cases it is well to see that all of the products are washed or cleaned out of the intestines. As defecation is partly under control of the will, and as the body is a thing that habits, good or bad, will have tremendous effect upon, the habit of regulating the bowels is a very good one to form. Many a case of obstinate constipation is caused by the person during childhood not having formed a regular habit of going to stool: the same may be said of some of the misplaced uteri, the lower bowel is full and will press upon the uterus and push it out of place. It is a good thing to impress upon parent, child

and teacher that a regular habit of attending to the bowel movements is a necessary thing to do to maintain health. This is a call of Nature to get rid of the materials that are foreign in the body and if not heeded there will be trouble ahead for someone.

Micturition—

This is in a way even more important than is defecation, for while defecation is the means of getting rid of foreign matters that cannot be utilized in the physical economy, micturition is the throwing off of the actual waste materials of the body through the urine. This act is also partly under the control of the will, in fact almost entirely so. As the organs controlling it are so interwoven with the whole nervous economy, any derangement there or injury will tend to affect the whole nervous economy. In fact, the private parts of the human race have a tremendous effect upon the whole life of the individual. Not only will the nerves become affected by irregular or too procrastinated micturition, but also will the poisonous substances, the waste of the body, be re-absorbed as in the case of the faeces, and will cause as much if not more damage and the results even more quickly seen. Therefore in disease, in health, a great deal of stress should be laid upon the regularity of the call of Nature called micturition.

Rest—

Every cell must have power of motion of some sort and of course if the motion would be continuous the cell would at last die, but there are periods of rest that every cell must or should have. In some cells rest is voluntary, while in others reflex, while with still others it is due to materials producing a feeling of somnolence in the body. Thus natural sleep is caused by the liberation in the blood of substances produced in the course of metabolism and these substances acting upon certain nerve cells or terminations and sleep is produced. After the cells are quiet this material is gradually thrown off again and the individual has had sufficient rest and the sleep is over. The term "rest" when applied to the body does not mean the stopping of all activity, but a changing of it, so that one part may rest while the other will keep it living, thus all cells are not resting at the same time.

REPRODUCTION.

In the lower form of animals it seems as if the main object in living is to reproduce the kind—in somewhat higher than the lowest, the insects, reproduction seems to be the principal object although there are others that are evident. For instance, many of the insects will lay the eggs and place them where they will hatch or develop and then when that is done the adult will die. Thus it is to be seen that the supreme effort of life should be the reproduction of kind. The higher one goes in the consideration the more other and complicated things appear besides reproduction that will take up the time and attention of the living things. It is needless to say that in man these other things are extremely complicated. If man is a supreme being on the earth of course there can be nothing of higher nature than the reproduction of that kind of being.

All cells and animals live to a great extent by habit. Habit is absolutely essential to life, for it is not habit until repeated sufficiently often. The heart beat, the respiration are both habits of the organism. There are other habits of life that are inherent and some acquired. If the habit be good, it will benefit the body and if it be bad it will not. The inherent habits are the ones that have been placed there by Nature so that no matter what comes or goes the tendency for that habit will be there. Reproduction is one of these. It is the inherent habit and right of every living organism to reproduce kind. That is so in the amoeba, the ant, the elephant, the bird, the Man.

The matter of reproduction has of course in recent years been the subject of much discussion as Eugenics have been brought to the front, but there has not been to my personal knowledge a frank and open discussion, at least in medical meetings which I have had the pleasure of attending, concerning certain matters. These matters are of the gravest concern to the present generation, and to the future both individually and as nation and world. The commercial conditions have become so rigid, the intellectual requirements have become so great that between the necessity of earning sufficient money to keep the children living as they should after they are born and the moral responsibility of bringing them up otherwise than uneducated beings, the result has been deferred marriage, prostitution and even rapine, besides masturbation and coitus reservatus. This is only a part of the essay, but there is room here

for discussion of an honest nature. The reproductive sphere is no less developed in man than in other animals and it is a strange thing to note that the more intellectual a man may be, the more sexual he is (ministers, teachers, etc.) and in fact it is well that such be the case if they would reproduce as good as they are themselves in honest marriage, but the result is that so frequently they will not. I do not think that the great majority of men frequenting the houses of prostitution of the "better class" do so just for badness, but the call for sexual congress is so great and from one reason or another they are not able or are afraid to have it with their legitimate opposite in sex. This call of Nature seems to be as great an one as many of the others that can be mentioned and it must have a hearing. Every boy, girl, man or woman who is past twelve years of age knows something of this call—something of its legitimate or illegitimate gratification. Therefore it must be considered. If there were a legitimate way to appease this appetite and yet not bring too many children into the world, marriage would be entered into by many a young man, and he would in time be all the better for it, and later on, conception could take place. My experience with those HONEST MEN who have used the cundum has been that after awhile they will desire children. I know of some who use the cundum at certain times and then permit children to be born at certain periods or at least allow of the possibility of conception by using no means of prevention. There is a moral to this. While there are some men who will contain self, the vast majority will not and they will either overdo the matter at home with the wife in the matter of causing conception, preventing it, coitus reservatus, syringing, etc., (and the result is a shock to the entire nervous system of both participating in the act), or seek gratification elsewhere. Not as a plea, but as a query, let it be asked would it not be better to allow MARRIED people under certain conditions, say those who have already had two children be allowed the legal use of the cundum at times? Some claim that its use will be as bad as masturbating. That statement is right here challenged—for while it is admitted that this is not the grandest conception of sexual congress, it is also contended that things have gone too far in the human race for us to AT ONCE stop all of the prostitution, etc., that is going on all around, but it is contended that some method of attempting to keep a man home by his wedded wife is needed very much these

days. Masturbation is a cowardly act, it is generally done in private, it is sneaky, the person indulging in it is afraid to ask for sexual connection, he has the means of gratification right at hand and will abuse it nine times out of ten. The proper sexual relation needs an interchange of not only the feeling between the sexual organs but the body and temperament of the opposite in sex. In masturbation this does not exist. In the use of the cundum there is everything that Nature requires but there is simply a prevention of the fluid of the male entering the uterus of the female. Again let me state that this is NOT a plea but a statement made to bring forth the honest replies in discussion for the purpose of helping us all to honest conclusions and actions, for either the use of the cundum is right or absolutely wrong and legal measures made to be enforced.

In the matter of gratification of sexual feelings it is not for one moment to be thought that this is a plea to gratify the MALE alone, for many of the delicate sex are suffering from too much or too little or improper sexual connection as may be seen in the neurasthenics, etc., in that sex. What is good for one sex is for the other.

As to the sexual congress let it be again emphasized in other words that the habit of reproduction is the most potent in life—for life actually depends upon it—without it the continuance of life could not be. The pleasure of coition is secondary, for frequently the impelling force calling say a young boy or girl for the first time is NOT for the good feeling for it has not as yet been experienced—the primary reason for the act is the Call of Nature aided by emotions, inquisitiveness and companions. In man and man alone is sexuality subverted into sin and filth.

HABITS IN GENERAL.

As has been said, all creation is carried forward by habit. Now, these habits should be recognized. If habit be due to the essence of life that is within the cell and the nerve cells contain the essence, and the brain and nervous system consist of nerve cells or their products, and the brain be under the control of the mind, and the mind is possibly identical with the soul, or at least its expression, it may be seen that the habit of mind will effect to a great extent the habits of the body and too the habit of mind will express the inner man,—his worth or his lack of it. Therefore as physicians, we should endeavor to impress

upon all with whom we come into contact to listen to the Call of Nature—and train the mind so that its habits will be those which will result in the best for the entire body, training all that we can to proper conception of life and its duties and being lenient if necessary for the weaker ones, and ABOVE all get all to think of the various calls of Nature. It is needless to say that Nature calls every man and woman to do his or her best to reproduce good types of the race and not only reproduce but also raise the product of reproduction to a better type than its progenitors.

THE CALL OF NATURE IN THE TREATMENT OF DISEASE.

If the Call of Nature is necessary in health, it is also necessary that when some law of hers has been disobeyed, that the NATURAL way, her way, would be the best and the quickest to remedy the fault. Homœopathy is the only method of Natural cure with the use of medicines, but homœopathy recognizes a given law, it must be the law of Nature, for Nature is the only thing that has a real law on this earth. The allopath may cure, but if he does, he does so on the principle of homœopathy whether he knows it or not, whether he will recognize it or not. He may relieve even more quickly at times than the homœopath, but he has NOT cured even though Nature may carry on his relief to a cure. One reason that there is a toxic or irritating action of remedies when administered is that the nature of the organism is revolting against the drug, etc.

Fellow physicians, let us bear this little paper in mind, let the Call of Nature in our lives be one that we will obey, let it be the battle cry in our medical practice and in our private lives and then will we be MEN and PHYSICIANS OF THE HIGHEST TYPE.

A PROCEDURE BRINGING PARTIAL RELIEF FROM FATIGUE IN TROOPS ON THE MARCH, by Maurice de Fleury.—The procedure referred to consists in having the men lie on the ground, with their heads resting on their knapsacks, and their lower extremities, preferably after removal of the shoes, extended perpendicularly upward and resting against a tree, wall, hedge, or the face of a trench. In this position, a series of rapid movements of the toes, ankles, and if possible, the knees, are to be executed for a period of five to fifteen minutes. If no suitable support is at hand, the men may rest their legs against one another. The effect of the procedure is a prompt and striking relief from the previous sensations of joint stiffness, muscle cramp, weight, etc., so that troops apparently exhausted may in fifteen minutes acquire the ability to put forth a further effort, possibly with decisive results.

CANCER OF THE SKIN.

BY

RALPH BERNSTEIN, M.D.

Clinical Professor of Dermatology Hahnemann Medical College, Philadelphia, etc.

THERE is no sense in having cancer of the skin. Promptly and properly eradicate every mole, wart, angioma, or other abnormality, immediately upon its appearance, then the present and future generations will at least be rid of the dreaded skin cancer.

Who is to blame for the prevalence of skin cancer? The sufferer to some extent of course. But let us not forget the advice which had always been handed to the patient by the old time doctor, for ages and ages, and that was, leave your mole alone, leave your wart alone, don't touch it, don't let any one else touch it, not even another doctor, it will never bother you.

This is what the modernist is up against every time he points out to his patient that he has a pre-epitheliomatous lesion. Some old time doctor said leave it alone, some old women, who thought they knew more than all the doctors put together said leave it alone, and so the public for the long years gone by have been educated.

But not so with the younger generation of doctors, they have been made to realize in their studies, that every mole, wart or angioma is a potential cancer and that it should be immediately decancerized. And they are doing heroic work in helping to wipe out the scourge of skin cancer at least.

The public are realizing as well, that skin cancer can be prevented, they are recognizing this fact through the vast amount of education which they are receiving along this line, through the many campaigns which are being conducted for their benefit.

Don't forget that senile keratoses are pre-epitheliomatous. I refer to what is called concrete senile seborrhœa, also called senile scum, the dirty looking brownish blackish looking spots seen on the skin of the aged. Usually upon the backs of the hands and the face, in fact no part of body is exempt.

Seborrhœic detritus slowly piles up on these spots becoming

quite hard, often quite elevated, difficult to remove, and if once removed, they show numerous villi fitting down deeply into the gaping follicular orifices.

This is called concrete senile seborrhœa and is surely epitheliomatous in nature. Remove it at once and prevent cancer. Not by merely pulling it off, for it will return at once, not by the use of acids or caustics, for you merely stimulate the deeper cells to renewed activity and it will return ten fold.



1. Superficial skin cancer showing typical scabbing. Attend to it now, 'ere it is too late.

How shall it be properly removed? By electro dehydration called dessication by some, by thermo-albuminization, called heat penetration by others, and last but not least but best refrigeration.

Now that the epithelioma which develops from senile seborrhœic spots has been discussed, let us consider the type which has its beginning other than from a mole or wart or an angioma perhaps.

This type begins as a small pink looking papule quite superficial at first, almost the color of the skin, but often a shade or two pinker. It at times has a pearly appearance, as the papule enlarges the centre may become depressed and the outer margin becomes surrounded with the so-called pearly margin, which is quite characteristic; the skin cancer is now in full sway.

Light superficial scabs form, they drop off, they form again



2. Rodent ulcer type of skin cancer. Procrastination is the thief of time. Procrastinate not. Attend to it now. This was completely healed by refrigeration. The eyelid having been completely severed is now wholly restored without distortion of any kind.

and again, serum oozes from its base, and so it slowly but surely grows. There is no pain, oh, that there were, then would the patient be tempted to seek relief, but he does not, until often it is too late.

Then there is the deep type of skin cancer, this begins as a deep hard nodule, which lasts for a long time, later on it begins to break down and ulcerate, with the same old history of scab

formation which drops off only to reform. The patient always volunteers this information, and it is enough to clinch a diagnosis at once.

Then there is the superficial form of skin cancer known as epithelioma encircasse, it wanders in its progress, always superficial, often spreading over large areas, seldom ulcerates, if it does, only in small areas, here and there. It has the



3. Well advanced cancer of the skin showing orbital œdema. Not too late for treatment. Attend to it now, 'ere it is too late.

same elevated margin, no pain, dark red in color, and looks all the world like a syphilitic manifestation.

Let us not discuss the advanced stages of skin cancer at this time, we have seen too many of its dreaded pictures, knowing full well that many times we could merely stand by and watch the patient slowly but surely succumb, because we were helpless, all because the patient or doctor did not attend to it in time.

Now what else can we do for the patient besides properly

removing the cancer, or decancerizing a pre-epitheliomatous lesion? Give him the indicated remedy? Why of course, why not? Surely, the properly selected indicated remedy increases the opsonic index, certain it is that it increases the antibodies, and just as certain it is that it makes the soil unfertile for the lesion to exist, or at least helps it wonderfully well. You don't believe that the indicated remedy is of any avail in the treatment of skin cancer? Well try it and see, that is the best way to find out.

What are some of these remedies? Well here they are:

Arsenicum alb. high, the higher the better. Sounds funny, but no matter, I am learning every day.

Hydrocotyle Asia. 6X. Thuja 6X-12X-30X. Sepia 12X-Condurango 6X. When the lesions are open only. Nitric Acid 12X. Hoang nan 12X. For mucous membrane conditions of the mouth. Petroleum 6X. and Guarana 12X. are some of the more common remedies; look up their specific indications, then you will know full well that you are doing all in your power for your skin cancer patient, and only then.

Yes, there is still more that you can do for your cancer patient, and as well for your pre-cancerous patient or for one who comes from a cancerous family and is therefore all the more predisposed to cancer, and that is see to it that they fully observe the proper rules of health and hygiene and furthermore see to it that the constitution of that individual is always at or even above par if that is possible.

Now how about diet? Very important. Absolutely a vegetarian diet, remembering that eggs are meat. Absolutely prohibit alcoholic beverages of all kinds, stop tea and coffee or any other stimulating drinks.

Here's a good thing from the New York Skin and Cancer Hospital which is given to their cancer patients, and has just been published by *The New England Medical Gazette*, in their campaign against cancer.

1. Cancer is a serious disease which should receive constant medical care from the time it is first suspected.

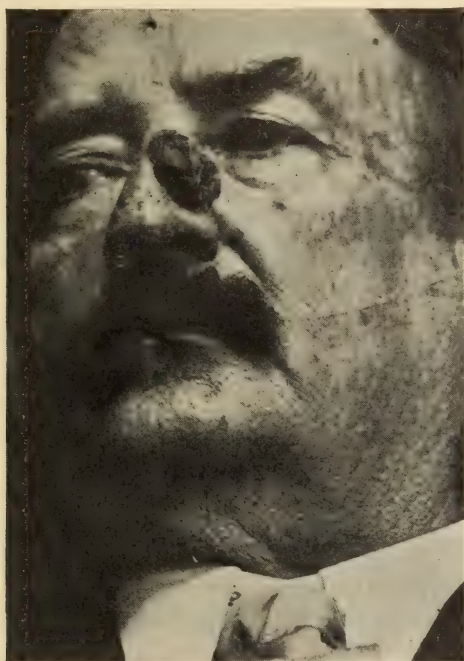
2. "Cancer Specialists," who advertise, should be carefully avoided.

3. Cancer is not contagious, and there is no danger of communicating the disease to others.

4. Cancer is not a disgraceful disease, and there is no reason for being ashamed of it or hiding it.

5. As soon as cancer is suspected, whether there be a lump or sore or other symptoms, it should be at once cared for by a competent medical man, as the earlier it is treated the more prospect there is of its being cured.

6. Anything suspected of being cancer should not be handled or squeezed, but should be kept from all irritation, as all this spreads the trouble and renders the cure more difficult.



4. Typical skin cancer of the concrete senile seborrhœic type. Attend to it now.
Was successfully removed by refrigeration.

7. When it is decided that a surgical operation is necessary this should be done completely at the earliest possible moment: delay is dangerous.

8. The proper medical treatment of cancer should never be neglected both at the very beginning, and also after an operation has been performed.

9. It is not necessary to operate on every cancer, X-Ray and radium are often of value (I add, Electro-dehydration, thermo-albuminization, and refrigeration are even better), and

the disease may disappear and remain absent under proper dietetic and medical treatment.

10. This treatment consists of an absolutely vegetarian diet with continuous proper medication, for a long time.

11. To get favorable results the treatment should be kept up strictly until discontinued by the physician.

It hardly seems probable that we should still consider cancer as a constitutional disease. We can most certainly deny the fact that cancer is really transmitted by inheritance. We can say, however, that certain families do inherit a type of cell structure which has less resistance to the possible implantation of a cancer germ; because I believe thoroughly that the parasitic theory of cancer will be affirmed in time.

While histologically there is shown an excessive reproduction of cells which destroy surrounding tissues and structures, and put in their place their own progeny, it can be explained on the hypothesis that a cancer develops and reproduces itself because of the stimulation of such cells by the presence of infecting germs, causing a change in character of the cells from their normal condition into that of the characteristic cancer cell. That is, the entrance of a cancer germ upon a site which has been undergoing a slow process of irritation or stimulation, which having been enacted during a great number of years, and even, it has been clinically reported, upon the site of a single injury or irritation, shows that it seems necessary to have a lowered existing vitality or some existing abnormal condition of the skin itself.

Gaylord of Buffalo, and Plimmer, of England, are thorough in their convictions that they have a protozoon that produces cancer, while Canfelice, of Italy, contends that a mycetic fungus is responsible for cancer growths.

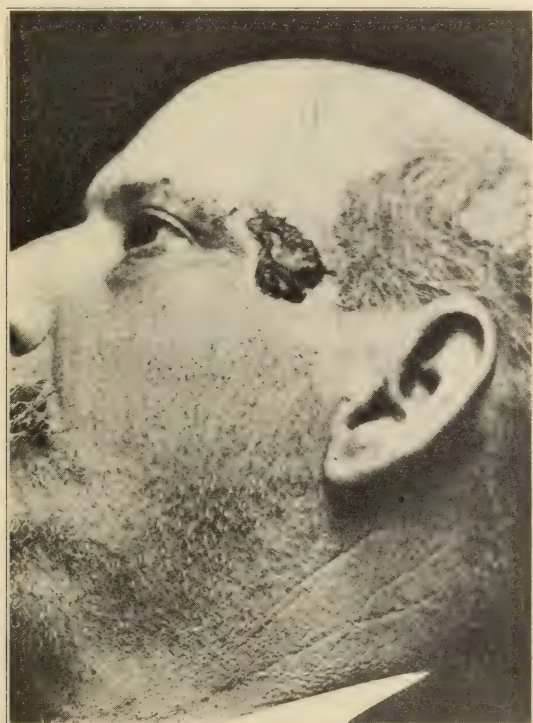
The question as to how the parasite enters into the body has been discussed by Parke, who, according to Knelliott, mentions twenty-eight cases of husbands having received cancers from their wives.

In cancer of the lip, mouth, etc., it is possible that the germ may have its entrance through the normal bodily openings. Constant irritation from cigar and pipe smoking, decayed teeth, etc., may be the niches for the entrance of the parasitic germ.

It has been pointed out that certain houses have possibly contained the infecting germ because of the presence of cancer

on those who have resided in these houses for successive years. it has, as well, been demonstrated that infection of cancer may have been due to germ life, because of the fact of epidemics occurring among smaller animals confined in cages, of which very interesting accounts are given by Loeb, Michaels, Borrell, Gaylord and Cowells.

Any existing constantly inflamed area in the aged showing evidences of degenerative changes, or even without that evi-



5. Superficial papillary cancer of the skin with typical scabbing. Attend to it now.

dence, should always be looked upon with suspicion as being cancerous. It certainly must be borne in mind that the clinical pictures of skin cancers certainly include a large number of types which are not generally recognized as belonging to any particular group, but are sometimes mistaken for the infective granulomata and other skin diseases.

The clinical pictures of epithelioma are usually sufficient to enable the expert to make a diagnosis on them alone; but the

safest course to pursue in nearly all cases is to confirm that diagnosis by microscopic examination.

There is one important fact which is not at all thoroughly impressed upon either the laity, upon the student, or even upon the physician himself, and that is the early destruction of all suspicious growths. If such a course were pursued the future generation would be without cancer, because, I reiterate, that I believe the parasitic theory of cancer will be duly affirmed.



6. Typical superficial craterform cancer of the skin showing well developed pearly margin with umbilicated center. Do not wait for further development, attend to it now.

Our knowledge certainly during the past has not tended that way, but certain it is that indirect evidence does exist that we can possibly have a parasitic hypothesis.

While it is true that all attempts to demonstrate the presence of a specific micro-organism have so far failed, yet let us bear in mind that while for a great number of years it was impossible to find or demonstrate the specific micro-organism of syphilis, it has been found; and so there are those who believe that in due time a cancer germ as well will be demonstrated.

Therefore, it behooves the public and physicians as well to be on the lookout for suspicious skin growths no matter at what age of life and whether they be but a mole, wart, angioma or any other abnormal type of skin lesion, all of which are epitheliomatous in nature and should, therefore, be immediately and properly decancerized, and after eight years of experience, I know of no better method than that of refrigeration. Thermo-albuminization being particularly efficacious in mucous membrane lesions of the mouth. Electro-dehydration being particularly of service in removing superficial moles, warts and nævæ, and refrigeration being particularly efficacious in the removal of epitheliomata whether in their pre-stage or when fully developed.

TRAUMATIC RUPTURE OF THE MEMBRANA TYMPANI.

BY

JOSEPH V. F. CLAY, M.D., PHILADELPHIA.

INJURY to the tympanic membrane by direct trauma occurs infrequently. This is due to the protected position of this structure within the temporal bone, at the end of the tortuous external auditory canal, and one and one eighth inches from the external auditory meatus. It is more frequently ruptured by indirect violence, through condensation of air in the external auditory canal, or as a result of head injuries. Undoubtedly many cases of rupture of the drum head by indirect violence, through condensation of air in the external canal, pass unrecognized, the inconvenience at the time not being sufficient to cause the patient to seek the advice of a physician.

Rupture of the drum by direct violence may occur as a result of unskilled instrumentation in the external canal in efforts to remove cerumen or a foreign body. Patients have inflicted such injury upon themselves by using pins, toothpicks, etc., to allay itching in the canal. The ear drum has been ruptured by passage of a Eustachian bougie beyond the tympanic orifice of the tube.

In cases of rupture by direct violence the size and shape of the perforation vary, depending upon the size and shape of the instrument and the vis a tergo. A sharp pointed instrument

thrust quickly into the canal will most likely penetrate the postero-superior portion of the drum. If the instrument is blunt and enters the canal slowly, it may ride over the posterior slanting portion of the drum and penetrate anteriorly. Zaufal, (*Archives für Ohrenheilkunde*, Vol. VIII) in experiments upon cadavers, demonstrated that direct rupture of the drum occurs usually in the anterior half of the membrane. Politzer and Dench claim that rupture by direct violence usually occurs in the postero-superior quadrant. In the one case of rupture of the drum by direct violence observed by us the perforation occurred in the upper posterior quadrant.

The membrana tympani is ruptured indirectly by sudden condensation of air in the external auditory canal. This may occur as a result of detonation of heavy explosives. Blows upon the ear with the outstretched hand have thus injured the ear drum. The ear drums of babes have been ruptured by kissing the ears. Forcible inflation of the ears by means of Politzer's method, or violent coughing or sneezing will cause a rupture of the drum. It is the opinion of many otologists that rupture of the drum by forcible inflation occurs in cases where there have been pre-existing catarrhal changes.

The position, size and shape of the perforation, when due to indirect violence, depend upon the histologic make-up of the drum,—to the arrangement of the fibers in the fibrous layer. These, you will recall, are arranged in two sets: first, those radiating from the umbo to the periphery, like the spokes of a wheel; and, second, radially arranged fibers which are more dense at the periphery. Rupture occurring then in the central portion will tend to follow the direction of the radiating fibers.

Head injuries are frequently complicated by rupture of the ear drum. This may occur as a result of concussion, or a direct fracture through the temporal bone, the line of fracture passing through the drum and at times fracturing the manubrium. These cases are not infrequently complicated by fracture through the mastoid, semi-circular canals, vestibule or cochlea.

Rupture of the ear drum is associated with a train of symptoms which when elicited is fairly characteristic. Most authors state there is first a report in the ear, a decided "pop." This symptom was not elicited in any of the observed cases. Pain of a sharp lancinating character is usually observed. Tinnitus aurium is not always present, and, when present, is de-

scribed differently by different patients, some stating it is roaring, others bell-like or buzzing. Dull hearing is also an inconstant symptom, but it is more frequently present than the tinnitus. Dizziness may be present, and in some instances is slight, while in others it is quite marked, the patient exhibiting typical vestibular disturbance. In cases associated with fracture of the skull frequently the patient is unconscious and the subjective evidence is not obtainable. Here only the most careful objective examination and application of the caloric or galvanic tests will lead one to a correct interpretation of the meaning of the tear in the drum. Bleeding from the ear is usually present but varies in amount, depending upon the extent of the trauma and the vascularity of the drum. Some cases bleed profusely while in others there will not be sufficient bleeding to present at the external meatus and may only be discoverable upon inspection with an aural speculum and head mirror. In cases of fracture of the skull with tearing of the drum, the bleeding from the ear is usually quite free, often lasting for twenty-four hours after the receipt of the injury. In cases of rupture of the drum where suppuration supervenes the case takes on the clinical aspect of a suppurative otitis media. This is especially liable to occur where the rupture is due to direct violence. It may also occur in rupture due to indirect violence as a result of meddling treatment.

The treatment of traumatic rupture of the ear drum can be summed up in a few words. In cases due to indirect violence *let them alone*. Watch carefully and aseptically for suppuration. It is not advisable to irrigate the ear to cleanse the canal for we may readily carry infection from the canal through the rupture into the middle ear and cause a suppurative otitis media.

Rupture of the drum due to direct violence is usually followed by suppuration. It is therefore advisable to anticipate the trouble and if the tear is small enlarge it and treat as a case of suppurative otitis media.

Where we have a rupture of the drum complicating a head injury we must determine whether there is a simple tear in the drum or a fracture of the temporal bone. Where a simple tear exists it has been our custom to let them alone and watch for symptoms. It is generally understood that ruptures of the drum due to fracture of the skull suppuration usually follows. This has not been our experience with cases seen in the sur-

gical wards at the Hahnemann Hospital where large numbers of these cases are treated. Where it can be demonstrated that a fracture involves the mastoid or labyrinth surgical intervention is imperative.

CASE 1.—Male, age 54 years. Diagnosis: Direct traumatic rupture of the membrana tympani, suppurative otitis media. Patient went to sleep in a hay loft and was awakened by sharp, lancinating pain in the right ear. He immediately noticed dull hearing and a heavy sensation in the right side of head. Placing his hand to his ear he felt something protruding from the canal. He removed it and found it to be a wisp of hay. This was followed by bleeding from the ear. We saw patient next afternoon and, upon examination, found the right canal presented linear lacerations on the anterior and posterior walls. The canal near the drum contained blood which was removed by carefully mopping with cotton. The drum was markedly injected and an irregular perforation was seen in the posterior upper quadrant. There was no bulging of the drum. The canal was cleansed by mopping with boric acid and alcohol and a piece of sterile gauze placed in the canal. Next day drum was bulging and perforation smaller. Patient had had pain, the hearing quite dull and there was antrum tenderness. Free incision of the drum was performed. This relieved the pain and the ear discharged profusely for a week. At the end of three weeks the drum was healed and hearing returned to normal.

This case illustrates the usual course to be expected when infected instruments penetrate the drum.

CASE 2.—Male, age 36 years. Diagnosis: Traumatic rupture of membrana tympani, suppurative otitis media, mastoiditis. Immediately following a dive ten feet into a stream of water he developed pain in right ear, associated with a roaring tinnitus and dull hearing. He consulted a physician at once and was informed the ear drum was ruptured. The pain continued and in a few days a stringy discharge. A few days later discharge more profuse and he became tender over right mastoid. Operation was advised but patient refused. He consulted us at this point and we advised operation. A simple mastoid operation was performed by Dr. Gilbert J. Palen. Extensive necrosis of the cellular structure was found. Patient made good recovery.

This case illustrates the less favorable outcome of a case of

rupture of the ear drum. Undoubtedly the bacteria laden water was responsible for the infection.

CASE 3.—Male, age 19 years. Diagnosis: Traumatic rupture of membrana tympani. Was struck on left ear with open hand. At once he experienced severe pain in the left ear, with dull hearing and bleeding from the canal. No dizziness or tinnitus. He consulted us the next day. There was a small amount of blood in the external canal and a linear rupture was seen posterior to the manubrium. No treatment. Patient was instructed to report next day when the drum was healed and all injection disappeared.

CASE 4.—Male, age 17 years. Diagnosis: Traumatic rupture of membrana tympani. Two days ago struck on right ear with open hand. Immediately he developed pain in the right ear with dull hearing, but no tinnitus, dizziness or bleeding. There was a small amount of dried blood in the canal and an elliptical perforation anterior to the manubrium. The patient did not return for several days when examination failed to reveal perforation. The drum presented good gloss and cone of light.

(The left ear is more often struck with the hand because most persons are right handed and in delivering a blow with the open hand, the left ear of the recipient bears the brunt.)

These two cases illustrate the outcome of rupture of the drum by the indirect violence when "left alone."

CASE 5.—Female, age 10 years. Diagnosis: Traumatic rupture of membrana tympani, suppurative otitis media. Child slightly dull of hearing for some time. Two weeks ago was slapped on left side of head, striking left ear. The child immediately complained of earache and there was bleeding from the canal. The pain continuing, the mother instilled some warm oil. Two days later discharge appeared from the canal. At time of examination canal contained muco purulent secretion, the drum was injected and bulging. A perforation presented in the anterior upper quadrant. Careful attention for a few weeks and the drum healed. The hearing was found to be below normal in both ears. The adenoids were subsequently removed and the hearing improved rapidly.

We feel that the meddlesome treatment on the part of the mother was an important factor in producing a suppurative otitis media and illustrates the advisability of leaving these cases of rupture alone.

CASE 6.—Male. Diagnosis: Traumatic rupture of membrana tympani, suppurative otitis media, mastoiditis. Was subjected to detonation of heavy explosives. Immediately he noticed dull hearing and tinnitus in the left ear. Does not recall pain, dizziness or bleeding. He syringed the ear with an antiseptic (bichloride) three times a day and in two days there was discharge from the ear with pain. He ran a course of suppurative otitis media, developed mastoiditis and was operated, making ultimately a good recovery.

This case is an illustration of the dangers of meddling treatment.

CASE 7.—Male. Diagnosis: Traumatic rupture of membrana tympani. Was struck on left ear with open hand. He immediately experienced pain in the left ear, free bleeding and dull hearing. There was a perforation, slit like in the posterior portion of the drum posterior to the manubrium and following the radiating fibers of the drum. No treatment. Perforation was healed in forty-eight hours.

THE ANNUAL REPORT OF THE DEAN OF HAHNEMANN MEDICAL COLLEGE, PHILADELPHIA.

FOR THE YEAR 1914-1915.

Presented before the Alumni Association of the Hahnemann Medical College of Philadelphia, June 3, 1915.

Honorable President and Gentlemen of the Alumni Association:

It is fitting and proper that every Alumnus of the Hahnemann Medical College of Philadelphia should know a great deal about his Alma Mater. It is not sufficient that he shall simply be able to explain the advantages of Homœopathy to his patients and prospective students of medicine but he should be able in addition to accurately state the many advantages of graduating from the Hahnemann Medical College of Philadelphia.

In the hope that you may learn more about the present status of your college, permit me to enumerate some of the things that have been done and some of the things that must

be done, if you wish to continue to enjoy the prestige of Homœopathy and the pride of having graduated from "Old Hahnemann."

ORGANIZATION.

The heads of the eleven departments constitute the present Governing Faculty which is in effect the Executive Committee of the entire number of teachers; collectively known as the "General Faculty." The General Faculty through the Governing Faculty is responsible for the educational work of the college but subject to the approval of the Board of Trustees in which the entire authority of the College, the Hospital and the Nurses' training school is vested.

Dr. Keim was recently elected a member of the Board of Trustees for the sole purpose of representing the Alumni and any one of you may properly bring to his attention any suggestions you may wish to have considered.

Eleven committees of the General Faculty are assigned special duties, as follows:

Alumni—Dr. Van Baun, Chairman.

American Institute—Dr. Carmichael, Chairman.

Catalog and Curriculum—Dr. Sappington, Chairman.

Endowment Committee—Dr. Bartlett, Chairman.

Entertainment—Dr. Hunsicker, Chairman.

Hospital—Dr. W. B. Van Lennep, Chairman.

Legislation—Dr. John J. Tuller, Chairman.

Library—Dr. Bradford, Chairman.

Premedical—Dr. Pearson, Chairman.

Publicity—Dr. D. B. James, Chairman.

State Society—Dr. Northrop, Chairman.

This organization enables proper distribution of labor and responsibility and it is expected that time will prove it to be eminently satisfactory. Evidences of the good work already done by these committees are everywhere apparent.

FINANCES.

For five years the Board of Trustees have been responsible for the finances of the college. The extensive improvements that have been made during this period and the greatly in-

creased expenditure for salaries has made this problem a difficult one.

No defence is necessary for the policy adopted several years ago of complying with all recommendations from powerful State and National organizations, for improvements of the college and increase of educational requirements for entrance. Your prestige, the prestige of the college and of Homœopathy itself, demanded that these suggestions be rigidly carried out. The result is; your status has not suffered, a model college, and the advancement of Homœopathy.

GIFTS AND ENDOWMENTS.

Through the increase of our expenditures and the decrease of tuition from students it became necessary to ask subscriptions from our friends and even from our teachers because our present endowments were insufficient to meet the additional expense demanded. It is a source of great satisfaction to state that all but a very few of our teachers have subscribed to the college funds.

It may be of interest to state that last year (1914-1915) the cost of maintaining the college was \$31,088.29 and at the end of the fiscal year September 1, 1914, the total deficit was only \$2,950.00. The college has been maintained this year by the loyalty of friends and teachers and all credit is due them for their assistance.

A systematic canvass for endowments will shortly be inaugurated by our Endowment Committee and it is hoped that you will all keep the needs of your Alma Mater in mind—not alone for the sake of your own personal contribution but for the purpose of enlisting the interest and support of your patients. It does not take much effort to influence a life long patient to bequeath part of his estate to the college and it seems to me that you would be glad to render this service to your Alma Mater. Several such bequeaths have been inserted in the wills of our friends this year.

We have already received some of the money from the estate of Dr. Edward R. Gregg and this money will assist us materially in solving our financial problems for this year. The high educational standard maintained by our college, however, necessitates a budget which is in excess of our income and we

earnestly request that all loyal Alumni keep the matter of contributions and endowment constantly in mind.

About five hundred excellent volumes mainly on Surgery and Emergencies, have recently been presented by the Executors of the will of Dr. Landreth W. Thompson. These books are a very welcome addition to our splendid library which is unquestionably the largest and best Homœopathic library in the world.

A piano was given to the college this year by "The Hahnemannian Institute," our undergraduate organization.

The Women Managers of the Hospital Association have pledged one-third of the money they raise to the college and the proceeds from the "minstrel show" will net several hundred dollars.

STUDENTS.

The Freshman class this year was the smallest in the history of the college and consisted of only ten students. There was a good reason for this small number namely, the increase of entrance requirements. College credits in Physics, Chemistry, Biology and a foreign language were demanded for entrance in addition to a high school education and those who entered this year might have entered the year previous with only their high school credentials. There has been considerable censure on account of our small Freshman class but I am glad to state that this large decrease in students is not as great as at many other medical colleges where the increased requirements were put into effect this year.

This unfortunate experience demonstrates how difficult it is to obtain students from classical colleges and shows the very great importance of our premedical course. Students may be admitted into our premedical course directly from the high schools and are given high grade college instruction in Physics, Chemistry, Biology and German.

This year we had a premedical class of thirty-nine and most of these will enter our Freshman class this fall. Several more students who are now in classical colleges have also planned to enter our college this fall, so we shall have a class approximately fifty students. If each of our classes contained fifty students the increased revenue from tuition together with even our present endowments would solve our financial

problem and this number of students can be obtained with the active assistance of our Alumni.

SCHOLARSHIPS.

There are many high grade young men who would be a credit to the profession, this college and to Homoeopathy but who are not financially able to study medicine. For these deserving students we are trying to obtain scholarships.

The President of the Board of Trustees, Mr. Hering, Mr. Clark, Mr. Jeanes, The Women's Homoeopathic League, The Hahnemann Alumni of Pittsburgh, The County Medical Society of Philadelphia and The Germantown Medical Society have each given one or more scholarships to deserving students and it is hoped that each Branch of the Alumni Association will select a deserving student in its vicinity, pay his tuition and send him to The Hahnemann Medical College. This plan would enable every contributor to have a personal representative in the college. It is not necessary to give this money directly to the student but simply loan him the money with the understanding that he return it as soon as he could after graduation and thus provide a scholarship for another student later.

Several Homœopathic organizations have expressed their willingness to seriously consider this plan and the class of 1905, the class of 1898 and the Scranton Alumni have each promised to pay the tuition of a student during next year.

ADVISORY COMMITTEE.

In order to bring the Alumni in closer relation to the college I would suggest that an Advisory Committee be created. This committee to consist of one representative from each Branch of the Alumni Association. This committee should be selected with an idea of permanence as the details of the college are so intricate that considerable time is necessary before any one could be sufficiently familiar to make wise suggestions. This plan would provide a source of authentic information concerning college affairs in every community and assist in many obvious ways. At least two meetings each year should be held in Philadelphia.

RESEARCH WORK.

Considerable research work has been published this year. The extensive report of the work done in the Hering Laboratory under the direction of Dr. Edwin Lightner Nesbit deserves special mention. This appeared in the *Journal of the American Institute of Homœopathy* in February 1913, and demonstrates the character of work that was done in the Hering Laboratory under his supervision. While this report is quite voluminous it does not fully do justice to the vast amount of detailed work involved. On July 30th, 1913 after Dr. Nesbit had tendered his resignation the following statement was made by the Registrar of the Faculty: "The increasing and difficult admission requirements and other matters make our financial problems so great that we could not see our way to accept your proposition."

Drs. Griggs and MacFarlan have recently completed a proving of butyric acid, and this report will be presented at the meetings of the American Institute of Homœopathy in Chicago.

Meritorious original scientific contributions have also been presented this year by Drs. Sappington, Ashcraft, Palen, Clay, Widman and others.

No apology whatsoever is necessary for the character of work done this year. Teachers have been faithful, interested, courteous and attentive and everywhere there has been a spirit of hard work. Students have been given much personal instruction at the bedside, in the dispensaries and in the laboratories. Our system of Round Table instruction which has been so favorably commented upon by leading educators has been satisfactorily continued. It is not marble halls, elaborate facilities and not even the amount of money that indicate the character of work done, it is the men.

You need not be told the advantages of being taught by the peerless Anatomist Rufus B. Weaver, who according to one of our western Alumni "stands out in the Anatomical World like Pikes Peak in the Rocky Mountains."

You realize the value of attending the clinics of Wm. B. Van Lennep who has been called the best clinical teacher of surgery in the United States.

You appreciate the great opportunities our students enjoy

of seeing Dr. Northrop's incomparable series of hand colored slides on Anatomy.

The remarkable Haines, the reliable Shallcross, the dynamic Bartlett, the staunch Tuller form a galaxy of which you may well be proud.

The younger men also deserve much credit for the up-to-the-minute work that is being done. The beautiful bone dissections and lantern slides made by Dr. Palen deserve special mention as do the large collection of colored skin plates collected and made by Dr. Bernstein. I might with equal propriety mention the work done by Drs. Sappington, James, Golden, Wells and Williams and many others.

Gentlemen of the Alumni Association you have a right to be proud of your college. You need not hesitate to hold up your heads and invite comparison with any medical college in the world. The college belongs to you. Do you fully appreciate your responsibility, and are you willing to do your share in maintaining the college? You can help in many ways—by obtaining subscriptions, endowments and students. All are needed and our slogan of "fifty students in each class" can be easily realized with your active assistance—with added prestige to you, your college and to Homœopathy.

Your college is open for inspection. Go from the basement to the top floor and see for yourself what is being done and when you get home speak a good word for your Alma Mater. You represent the college in your locality and the Hahnemann Medical College reflects your loyalty here. Let both the college and her sons advance together.

BOOKS BEST ADAPTED TO MAKE A WORKING LIBRARY FOR THE PRACTICE OF HOMŒOPATHY.

IN compliance with numerous requests from students and others, Dr. Thomas I. Bradford, the well-known Librarian of Hahnemann Medical College of Philadelphia, has compiled the following list of books dealing with the theory and practice of homœopathy that will best meet the needs of the average homœopathic practitioner:

Hahnemann: Organon.

Chronic Diseases.

- Materia Medica Pura.
Lesser Writings.
Bradford's Life and Letters of Hahnemann.
- Ameke: History of Homœopathy.
Grauvogl: Textbook of Homœopathy.
Dudgeon: Lectures on Homœopathy.
Allen: Cyclopaedia of Pura Materia Medica.
Baehr: Science of Therapeutics according to Principles of Homœopathy.
Bell, J. B.: Homœopathic Therapeutics of Diarrhœa.
Boenninghausen: Therapeutic Pocket Book: Whooping Cough.
Burt, W. H.: Characteristic Materia Medica, 2d ed.
Dake, et al.: Cyclopædia of Drug Pathogenery.
Dunham: Homœopathy, the Science of Therapeutics, 1877; Lectures on Materia Medica.
Farrington, E. A.: Clinical Materia Medica.
Gilchrist: Surgical Diseases and Their Homœopathic Treatment, 3d ed., 1880.
Gross: Comparative Materia Medica.
Guernsey, H. N.: Notes to Lectures on Materia Medica. Ed. by J. C. Guernsey, 1887.
Hale, E. M.: Homœopathic Treatment of Abortion, 1866. Homœopathic Materia Medica of the New Remedies, 2d ed., 1867.
Helmuth, W. T.: Surgery.
Hempel, C. J.: Materia Medica and Therapeutics, 2 vols. 1880.
Hering, Const.: Homœopathist or Domestic Physician, 6th. 7th or 8th ed.
New Provings of Sixteen Remedies, 1873.
Condensed Materia Medica.
Guiding Symptoms of the Materia Medica, 10 vols.
Holcombe, W. B.: Scientific Basis of Homœopathy.
Hughes, Richard: Manual of Pharmacodynamics. Manual of Therapeutics.
Jahr: Symptomen Codex, 3 vols.
Kippax, J. R.: Hand Book of Skin Diseases and Homœopathic Treatment.
Lilienthal, Samuel: Homœopathic Therapeutics. 1890. 3d ed.
Lippe, Ad.: Textbook of Materia Medica.

Millspaugh: American Medicinal Plants, 1884.

Mure, B.: Mure's Materia Medica or Brazilian Provings.

Amer. Inst. Homœopathy. American Homœopathic Pharmacopœia.

Boericke & Tafel, American Homœopathic Pharmacopœia.

Raue, C. J.: Psychology.

Special Pathology and Therapeutics.

Schussler: Twelve Tissue Remedies, 1890.

Winslow, W. H.: Human Ear and Its Diseases.

Kent: Repertory to Materia Medica.

Anschutz: New and Old and Forgotten Remedies.

Nash: Leaders in Homœopathic Therapeutics, Regional Leaders.

Bartlett, Clarence: Principles of Diagnosis.

Treatment, Clinical Medicine.

Bradford, T. L.: Index of Provings.

Pioneers of Homœopathy.

Bradford, T. L.: Homœopathic Bibliography of the United States.

History of Hahnemann Medical College.

Benidge: Refectory to the Eyes .

Clark's Dictionary of Medicine, 3 vols.

Arndt's System of Medicine.

Raue: Diseases of Children.

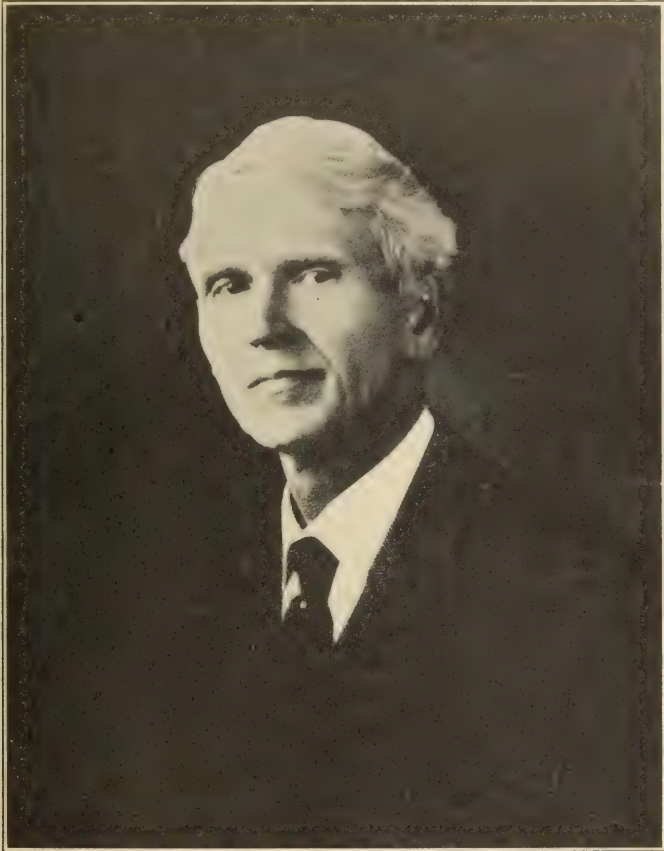
THE SIXTY-SEVENTH ANNUAL COMMENCEMENT EXERCISES,

OF THE HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF
PHILADELPHIA,

WERE held in the Garrick Theatre on Thursday, June 3d. Following a musical program with which the commencement exercises opened, and the invocation by Dr. Floyd W. Tomkins, Rector of the Holy Trinity Church, Governor Woodbridge N. Ferris, of Michigan, delivered a very able and eloquent address to the graduates on "Making the World Better." In the course of his remarks, Governor Ferris discussed the elevation of the standards of the medical profession during the last twenty-five years and then turned to his administration in Michigan, speaking of the difficulty of securing

appropriations to safeguard the health of the people of his state and the comparative ease of getting money to provide for those who are already sick.

"I go through the great tubercular sanatorium in Detroit," he said, "and I pass through the open air schools where the diseased children are restored to health, and I wonder what in



HON. WOODBRIDGE N. FERRIS,
Governor of Michigan.

God's Name the people of Michigan have against the boys and girls who are not tubercular, but who are heading in that direction.

"You must go into the world and preach the value of open air and sunshine so that the people will know, even as you do. Any school that does not send out its students as well

or better in health than when they entered, is a rank, arrant failure, despite all its pretensions to learning.

"Every school save only where the training would be absolutely marred by such a course, should be held out of doors. God forbid that you men should graduate if all you are going to do is settle down in the rut like many physicians and devote yourself to making money.

"Good manners are essential. You must learn to enter a sick room in such a way that a benediction seems to foreshadow your coming. You must learn to meet men and women and by your manner give your faculties and knowledge a chance to be put to work."

In closing Governor Ferris appealed to the graduates to be medical evangelists. He told them not to be satisfied with doing routine work of the ordinary practitioner, but to endeavor to solve some of the great problems before the medical profession, such as cancer and tuberculosis and to assume the responsibility of educating the people as to how to avoid and to wipe out disease.

The exercises closed with the conferring of degrees and the awarding of prizes as follows:

LIST OF GRADUATES.—Linford Shepherd Besson, Ambler, Pa.; Stephen Campbell, Philadelphia, Pa.; William Wallace Chisholm, 3rd, Huntingdon, Pa.; Harry Dellmarr Conley, B.S., Philadelphia, Pa.; Earl Spence Duncan, Coatesville, Pa.; Roger Talmage Fox, Tuckerton, N. J.; Clarence Hamilton Gray, Philadelphia, Pa.; Horace Francis Kline, Abington, Pa.; J. Glen Knauer, Reading, Pa.; William Russell Levis, Media, Pa.; William Lemmon Martin, A.B., Philadelphia, Pa.; Ashton Earl Neely, Coatesville, Pa.; Harold P. Peckham, B.A., LL.D., Waterford, N. Y.; H. Malcolm Read, York, Pa.; Myron Parkhill Rudolph, Pittsburgh, Pa.; John Preston Sharp, Palmyra, N. J.; Graydon Brown Smith, Allentown, R. I.; Francis Earl Spencer, West Grove, Pa.; Daniel F. M. Stedem, Philadelphia, Pa.; Max Riebenack Stockton, Swarthmore, Pa.; Alfred D. Strickler, Lebanon, Pa.; and James Francis Tompkins, Philadelphia, Pa.

PRIZES AND SCHOLARSHIPS.—Prizes and scholarships were awarded as follows:

The President's Scholarship.—A scholarship for the fourth year, offered by the President of the Trustees to the member of the third year class attaining the highest general average: Awarded to Charles Walker Lane. Honorable mention, Donald Renwick Ferguson and L. E. Strohm.

The Walter E. Hering Scholarship.—A scholarship for the third year offered by Walter E. Hering to the member of the second year class attaining the highest general average: Awarded to James Stuart

Seitz. Honorable mention, John Herbert Reading, Jr., and Hiram Grant Straub.

The Pittsburgh Alumni Scholarship.—A scholarship for the second year, offered by the Pittsburgh Alumni to the member of the first year class attaining the highest general average: Awarded to Norman Roberts. Honorable mention, H. Doyle Webb and Charles W. Tuthill.

Scholastic prizes of \$75.00, \$50.00 and \$25.00 each offered by the faculty to members of the graduating class attaining the first, second and third highest general averages, the third prize being given in memory of the late Dr. John E. James, former Professor of Gynecology.

First prize, William Lemmon Martin; second prize, Harry Dellmarr Conley; third prize, Clarence Hamilton Gray.

Prize in Pathology.—\$25.00, offered by the Professor of Pathology to a member of the second year class. Awarded to Charles S. Fox. Honorable mention, Robert Bahner Brown.

Prize in Physiological Chemistry.—Urinalysis Set, offered by the Professor of Chemistry to the member of the first year class attaining the highest average in this branch. Awarded to Norman Roberts. Honorable mention, H. Doyle Webb and Charles W. Tuthill.

Prize in Toxicology.—Analysis Set, offered by the Professor of Toxicology to the member of the second year class attaining the highest average in this branch. Awarded to William August Doebele. Honorable mention, Edgar Burnett Junkermann.

Prizes in Pharmacy.—United States Pharmacopoeias, offered by the Lecturer on Pharmacy to the members of the first year class attaining the highest average in this branch. Awarded to Norman S. Roberts and Ernest F. Purcell. Honorable mention, H. Doyle Webb.

Prize in Chemistry.—\$5.00, offered by the Professor of Chemistry to the member of the pre-medical year class attaining the highest average in this branch. Awarded to Robert Stroud Kropp. Honorable mention, Clinton P. Schaeffer and Nelson K. Myers.

Prize in Biology.—\$5.00, offered by Lecturer in Biology to the member of the pre-medical year class attaining the highest average in this branch. Awarded to Clinton P. Schaeffer. Honorable mention, Charles W. Ursprung.

Prize in Physics.—\$5.00, offered by the Lecturer in Physics to the member of the pre-medical year class attaining the highest average in this branch. Awarded to Clinton P. Schaeffer. Honorable mention, Mashel Pettler, Nelson K. Myers and Robert Stroud Kropp.

HOSPITAL APPOINTMENTS.—Announcement was also made of hospital appointments for graduates as follows:

Hahnemann Hospital.—William Wallace Chisholm, 3rd, Huntingdon, Pa.; Earl Spence Duncan, Coatesville; William Russell Levis, Media, Pa.; William Lemmon Martin, Philadelphia, Pa.; Francis Earl Spencer, West Grove, Pa.; Daniel E. L. Stedem, Philadelphia, Pa.; Max Riebenack Stockton, Swarthmore, Pa.

Women's Homoeopathic Hospital, Philadelphia, Pa.—Harry Dellmarr Conley, Philadelphia, Pa.

Pittsburgh Homoeopathic Hospital, Pittsburgh, Pa.—H. Malcolm

Read, York, Pa.; Myron Parkhill Rudolph, Pittsburgh, Pa.; John Preston Sharp, Palmyra, N. J.; Alfred D. Strickler, Lebanon, Pa.

Wilmington Homoeopathic Hospital, Wilmington, Del.—Ashton Earl Neely, Coatesville, Pa.

Reading Homoeopathic Hospital, Reading, Pa.—J. Glenn Knauer, Reading, Pa.

Rhode Island Homoeopathic Hospital, Providence, R. I.—Graydon Brown Smith, Allentown, R. I.

Sellwood Hospital, Portland, Ore.—Linford Shepherd Besson, Ambler, Penna.

West Jersey Homoeopathic Hospital, Camden, N. J.—Roger Talmage Fox, Tuckerton, N. J. and James Francis Tompkins, Philadelphia, Pa.

Metropolitan Hospital, Blackwell's Island, N. Y.—Horace Francis Kline, Abington, Pa.

NERVOUS SHOCK IN WAR.—W. A. Turner has studied the early symptoms of nervous and mental shock, from whatever cause, during a period of three months at the base hospitals in France. He distinguishes three groups of cases. In the first there is a definite type of mental shock in which the symptoms are essentially of a psychical character. In the second group there is a spinal type characterized by a limitation of the symptoms to the extremities and usually to the lower limbs. In a third group the symptoms are referred more particularly to the special senses. In this class the remarkable cases of blindness or amblyopia, deafness and deaf-mutism have been included. More specialized symptoms, such as stammering or hesitation of speech, local palsies and tic-like movements, have been included in a fourth group. In the more severe class of cases the patient is entirely unconscious of his surroundings. All the usual tests applied with the object of arresting attention—such as throwing a bright light on to the eyes, pinching the skin, or clapping the hands close to the ears—fail to provoke a response. The deep reflexes, however, are normal or brisk, and the plantar response is of the flexor type. The pupillary light reflex is frequently impaired or lost. Urine is passed normally; swallowing is carried out usually without difficulty. There are cases of loss of memory or transitory amnesia which are admitted to the base hospitals for further observation. Deafness of a transient character is not an uncommon symptom resulting from the explosion of big shells in close proximity to the patient, while blindness or impairment of the vision from the same cause is relatively infrequent. Hesitation of speech has been observed in several cases. The outstanding symptom of spinal shock is loss of power in the legs. There is observed a form of temporary "nervous breakdown" occurring in those who have been strong and well, and is ascribed to a sudden or alarming psychical cause, such as witnessing a ghastly sight or undergoing a harassing experience. As the result of such a shock the patient becomes "nervy," unduly emotional and shaky, and most typical of all, his sleep is disturbed by bad dreams. The dreams are of experiences through which he has passed, of shells bursting, of duels between aeroplanes, or of the many harassing sights of the war in the trenches.—*British Medical Journal*.

EDITORIAL

THE CAMPAIGN AGAINST CANCER.

THROUGH the efforts of the American Society for the Control of Cancer, a national campaign is being carried on during the month of July through the medium of the medical journals for the purpose of educating medical men and the laity in general in respect to the early signs of cancer and the necessity of prompt surgical intervention. It is estimated by competent authorities that 75,000 persons die annually in the United States from some form of cancer, and the mortality from this disease appears to be increasing each year. It is possible that this increase in the prevalence of cancer is more apparent than real, as it is unquestionably true that cancer, especially of the internal organs, was not infrequently overlooked as a cause of death in the past. A certain portion of the mortality rate, therefore, may be due to the more frequent recognition of this disease by modern methods of diagnosis. It is generally recognized, however, that cancer to-day is one of the most prevalent of all serious maladies to which the human flesh is heir, and any movement that will tend to lessen its frequency or to mitigate its results, should receive the earnest and enthusiastic co-operation of all medical men.

It would be foolish to content ourselves with the idea that our present methods of combatting cancer are satisfactory, for, despite the numerous methods that have been suggested in the treatment of this disease, it is generally recognized that early operation in incipient cancer, and in the so-called pre-cancerous lesions, is the most efficient of all known methods of dealing with this malady. The biological and pathological investigations that are being carried on in most every medical laboratory in the world will, we firmly believe, ultimately lead to a method of treatment that will rob the scourge of its terrors, but until such results are attained, the duty of the physician may be summed up in two brief maxims: "early recognition" and "early removal."

The methods employed in the present campaign organized by the Cancer Society consists in securing the co-operation of all national and local medical organizations and in disseminating the latest results of laboratory and surgical work to the profession and public through various educational agencies. The Cancer Society maintains a bureau of information which furnishes articles for newspapers and for lectures, and which has enlisted the support of the Boards of Health of the various sections of the country in preparing exhibits and lectures of a popular character. The work that is being carried on by the Cancer Society and by various local medical and health organizations, has already begun to bear fruit and there is every prospect that the harmonious activity and unity of purpose of the various organizations interested in this campaign will result in the progressive reduction of the mortality from this ancient scourge of mankind. G. H. W.

OYSTERS AS A SAFE FOOD.

FROM time to time during the past few years we have had reports of outbreaks of typhoid fever that were said to have been traced to the eating of oysters. The experimental work that has been carried on by the United States Public Health Service, has demonstrated that under exceptional conditions oysters can convey typhoid bacilli, although it is intimated that many of the outbreaks reported by local health authorities as due to oysters from outside sources, were actually traceable to contaminated water or milk supplies in the affected communities.

The only conditions under which the oyster can become a typhoid carrier are when it has become infected from water that is polluted by sewage or when, after being opened, it is washed in polluted water, or brought in contact with infected surroundings.

During the past year the Public Health Service has eliminated from the oyster industry every oyster bed likely to be polluted by sewage or other causes. From Virginia to Maine the beds have been placed under such restrictions as to make it practically impossible for oysters subject to pollution to be

shipped to market. In addition rules have been formulated regarding the "floating" of oysters and the matter of the water supply used in washing shucked oysters has also been gone into.

In the course of investigation, it was discovered that contamination of the oysters frequently took place after the oysters were removed from their natural beds and placed in fresh water in their shells or wooden floats. This process, which is commonly known as "floating" oysters, is carried out for the purpose of removing the salty flavor and of giving the oyster a fat appearance. The enlarged size of the oyster, however is merely due to the absorption of fresh water which, while it increases the bulk of the oyster about twenty per cent., does not add at all to its food value. In fact, persons buying oysters so fattened by liquid measure, actually obtain less food per unit than in the case of the natural oysters.

The rules that are now being formulated by the Public Health Bureau, do not entirely forbid the floating of oysters, but provide that they can under no circumstances be floated in polluted waters, and the length of time that oysters may be subjected to this floating or drinking process, is so limited as to lessen the salt content without perceptibly increasing the bulk of the oysters.

It is pleasing to note that, while there was at first some opposition to the work of the Public Health Service on the part of those engaged in the oyster industry, the results obtained have been so satisfactory, that all the States concerned have co-operated in an active manner and the oyster men themselves are anxious to see that no oysters from prohibited sources are placed on the market. As a result of the work that has been carried out, it may be said with truthfulness that oysters are fully as safe as any other food in common use.

G. H. W.

GLEANINGS

A PLEA FOR THE RATIONAL TREATMENT OF CANCER.—By L. Duncan Bulkley, A.M., M.D.—Many cases of undoubted cancer, both primary and recurrent after operation, are on record which have disappeared entirely and remained absent under a complete change of diet and mode of life, with more or less of proper medical treatment. Multitudes of cases are known everywhere in whom the disease has recurred, with terrible severity and death, even after the most complete removal, by the most competent surgeons, of very early lesions diagnosed as cancer, some of which proved to be only adenoma, microscopically.

The enormous mass of laboratory studies which have been recorded has added thus far very little to our knowledge of the real nature and cause of cancer, and really nothing to treatment, except to advocate the surgeon's claim of the right to remove instantly everything suspected to be cancer or "precancerous"! Surgery has striven, more and more actively of late years, to stem the rising tide of mortality from cancer, but, alas! the Mortality Tables of the United States show the futility of this means, for the death rate from this disease has risen over 25 per cent. since 1900.

Laboratory researches have rendered, however, a valuable service in connection with cancer, by the negative results obtained, so that the ground is pretty well cleared for a proper understanding of the real nature and cause of the disease. Thus, all are pretty well agreed that cancer is *not* due to a parasite, *nor* contagious, that it is not strongly hereditary, *nor* due wholly to local irritant action, that it is *not* altogether a disease of old age, *nor* belonging to any particular occupation, and that it does *not* affect any special sex, race, or class of persons: cancer exists all over the earth, but with striking differences in frequency, according to certain peculiarities in diet and mode of living, associated with advancing civilization.

The exclusion of the various suspected causes of cancer by the prolonged study of many trained laboratory and other workers along the lines mentioned leads the thoughtful person to inquire if there is not still some line of possible etiology which has not yet been fully explored; for assuredly there is some actual, physical cause for the aberrant action of originally normal tissue cells, which we call cancer. There is nothing mysterious about the disease, except that thus far its real cause has eluded laboratory workers, but which clinical workers have long suspected and suggested without much, if any, effect on the profession, so enamored has it become of surgery, and so insistent and loud have been the claims for a wholly local origin and nature of the disease.

But the failure of surgery to make any appreciable effect on the morbidity and mortality of cancer, as already mentioned, and the exclusion of all other possible causes, naturally leads us to look to a faulty metabolism, which has to do with such a multitude of other human ailments, and the deeper we search the laboratory and other studies which have been made regarding this, the more clear does it appear that it is along these lines we shall find the true means for the prevention and cure of cancer.

It is quite impossible in a brief article to present the evidence in which this statement is founded, which has been developed pretty fully elsewhere, and it must suffice to concisely state the principal points.

Cancer has been found definitely to increase with the spread of modern so-called civilization along the lines of luxury and attending indolence. This has been observed especially in the over-consumption of meat, coffee, and alcohol, as proven by statistics.

Many have recorded changes in the urine which indicate imperfect metabolism, especially of nitrogenous matter. Careful daily studies of the urine, both in the very earliest stages of cancer and late in the disease, show a very marked failure of elimination by this excretion, the solids being often not one half of that called for by the body weight of the individual. Careful observation will also detect a great failure in intestinal elimination, in both the very early stages of the disease and all through its course. So true is this that Sir Arbuthnot Lane has declared that cancer may be one of the late results of intestinal stasis. This probably operates through the poisonous action developed by the millions of microorganisms formed in the large intestine, indican being not an infrequent urinary exhibit. It has been shown that cholesterin is also an important element in connection with the genesis of cancer, and there is strong evidence that derangement of the endocrinous glands is associated with the production of this disease.

It is quite true that the exact metabolic disturbances, or the actual blood state, inducing and perpetuating cancer, have not as yet been demonstrated, and perhaps they never will be. But it has also never been shown exactly how cancer begins, or when a benign tissue becomes malignant, as Ribert has said "no one has ever seen the beginnings of mammary cancer": both aspects of the question, the constitutional and the local, rest on clinical grounds, and not a shadow of proof has ever been presented that the lump which we call cancer is purely local in character.

On the other hand, the constant tendency to a recurrence of the disease in the same or other locations, even after the most complete removal of the local lesion and surroundings, and the continued depression of vitality and degeneration of the blood, all point to something more than a local disease; they all show a constitutional cause which induced the original stasis and degenerative action of tissue in some particular locality which was unduly irritated, probably the site of an "embryonic rest," that is, a heterologous tissue ready to revert to reproductive life. This latter would seem to be the starting point, inasmuch as the tissues in general of cancerous subjects heal kindly, and, after injury on various portions of the body there is little or no tendency to tumor formation.

Even the occurrence of metastases accords also with the view of a constitutional disorder. For after surgical operation the patient is invari-

ably left uncared for, as far as any attempt to alter the dyscrasic condition which engendered the disease, and very naturally the transference of cancerous elements by the blood or lymph stream produces a local condition which the vitiated blood current develops into a fresh local lesion.

The apathy of surgeons to medical suggestions of their own distinguished members, past and present, is very surprising, but not less so than the practical disregard of cancer by physicians. One finds the strongest expressions in regard to the constitutional relations of cancer by Lambe, Abernethy, Willard Parker, Sir Astley Cooper, Sir James Paget, Esmarck, Sir Arbuthnot Lane, and others; and finally Dr. William J. Mayo, in his recent president's address before the American Surgical Association, asks, "Is it not possible, therefore, that there is something in the habits of civilized man, in the cooking or other preparation of his food, which acts to produce the pre-cancerous condition?"

And yet there has been relatively little serious attempt to investigate this line of thought or to test the principles underlying the metabolic theory of cancer, in its relation to diet and mode of life, as influenced by so-called civilization. While the microscope and laboratory work on animals have undoubtedly advanced the science of medicine prodigiously, they seem to have reached their limit in regard to cancer. Their negative conclusions, however, have paved the way for the medical man, through clinical study and physiological chemistry, to reach the real basic cause of the disease in the activities of system as a whole, as influenced by diet and mode of life.

This plea is made, therefore, with the hope that the matter may be thoroughly investigated and tested, and that it may result in a more rational treatment than the present one of attempting only to remove the *product of the disease*, the local tumor, while the cause of the formation of the mal-growth remains still active. Only by a rational treatment of the cause can we hope to restrain the steady increase of cancer, and to reduce its frightful mortality of 90 per cent. of those whom it has once attacked.

CANCER IN THE UNITED STATES.—It has been suggested by Walshe and others that the steady increase in the cancer mortality during the past century is probably due to greater accuracy of diagnosis. Coley, on the other hand, expresses the opinion that the death rate from cancer "is far greater than the rate shown by the vital statistics for the reason that there is prevalent among the laity a strong prejudice against the name, cancer, the result being that, in many cases of death from cancer, especially from metastatic cancer with internal complications, the family physician, out of respect to this feeling on the part of the family, will assign some of the secondary causes in place of the actual primary cause of malignant disease." In discussing the accuracy of American mortality statistics, Frederick L. Hoffman (*American Journal of Public Health*, June, 1915) says that Coley's statement is not substantiated by any facts derived from actual experience, and points out that it is rare for the health certificate to come to the notice of the family. All mortality statistics are open to criticism on the ground that there are contributing causes of death aside from the principal cause, which is not mentioned. In fact, it is not infrequently difficult to decide without a necropsy which of the concurrent diseases is the main factor in causing death, but Hoffman points out that usu-

ally cancer is a perfectly obvious disease not difficult of diagnosis. It has been stated that the increase in cancer frequently has affected only inaccessible or internal cancers not admitting under nonoperative conditions of accurate diagnosis. This theory is contradicted by statistics of cancer in the city of Frankfort, Germany, which Hoffman gives. Hoffman concludes that approximately about 75,000 deaths from cancer occur annually in the United States and that the death rate is increasing at the rate of 2.5 per cent. per annum. He states that the disease is much more common than is generally believed, and that it is the fourth in importance as a cause of death in the United States at the age of forty-five years and over. The mortality from cancer in the registration area of the United States during the decade ending with 1912 showed an increase of deaths from 68.3 per 1,000 in 1903 to seventy-seven per 1,000 in 1912.—*New York Med. Jour.*

CANCER IN GREAT BRITAIN.—Unfortunately no check can as yet be discerned on the increase of cancer or malignant disease which has been experienced in Great Britain for many past years. On the contrary, according to the *Lancet* for June 5, 1915, the loss of life from this cause was greater in 1913 than in any previous year on record. The mortality among males was equal to 947 per million living, and among females to 1,155 per million, compared with rates of 913 and 1,117 respectively in the year 1912. The tables show a constantly increasing mortality in proportion to urbanization, which is more serious in the case of males than of females; differences of the dimensions shown may be due to the better facilities for diagnosis in the urban areas, where a much larger proportion of the deaths occur in institutions in which post mortem examination is the rule, than, as in private practice, the exception. The considerable increase of mortality now recorded is very uniform, being common to both sexes in every class of area. It is also widely spread over the different age periods, the chief exceptions being in the case of women at very advanced ages. The excess of female mortality over that of males is concentrated mainly on the ages twenty-five to fifty-five years. At other ages there is either practical equality or a male excess, as at ages from sixty to eighty-five years in the country generally.

The increase of mortality from cancer of various organs differs. In both sexes the most rapid rates of increase are furnished by cancer of the alimentary tract, especially the intestines and stomach. Diseases of the female breast also claim a rapidly increasing number of victims, while mortality from uterine cancer is diminishing. It would appear that child-bearing increases the risk of uterine and diminishes that of mammary cancer; it may therefore be expected that the present decrease of fertility will be accompanied by an increase of mammary rather than of uterine disease. The mortality from cancer of the liver remains stationary. Secondary growths are of especial frequency in cases of breast cancer. Deaths thus certified amount to thirty-three per cent. in the case of the breast, whereas in the case of most other important sites the proportion falls short of ten per cent. Of the conditions complicating death from cancer which do not appear dependent on the existence of a growth, the most important are tuberculosis, diabetes, diseases of the circulatory system, Bright's disease, and childbirth.—*New York Med. Jour.*

FOLLOWING UP SOME HOSPITAL PATIENTS.—The general experience with public hospitals previous to the institution of social service work led to the conclusion that the efficiency of service to patients was not given due consideration. Too many men, women and children have been sent forth from the wards of hospitals, entered upon the hospital records as cured, only to return to their homes for a period of prolonged illness eventuating possibly in a return to a hospital or in death at home.

It is impossible and undesirable to voice constantly the weaknesses of public institutions. To call attention to our shortcomings does not necessarily imply a lack of appreciation of the excellent work already being performed. It is more rational, however, to avoid self-complacency and laudatory expressions while the possibilities of improvement loom up large in every direction.

The *Weekly Bulletin* of the Department of Health, City of New York, (February 13, 1915) calls attention to the later history of patients discharged from a hospital for contagious diseases after measles, scarlet fever, and diphtheria. According to the family records 53.3 per cent. of the children discharged were sick at home, 2.6 per cent. having pneumonia, 5.3 per cent. paralysis. Six per cent. of the measles cases and scarlet fever cases contracted diphtheria while 2 per cent. of the scarlet fever patients contracted diphtheria, and 2 per cent. of the diphtheria patients contracted scarlet fever.

Furthermore, upon physical examination 83 per cent. of the children presented some pathological conditions such as otitis, cardiac murmurs, albuminuria, etc.

A number of the patients discharged were probably in the incubation period of other diseases at the time they left the hospital, and naturally evidenced the disease shortly thereafter in the home. While it is true that mothers of these children required special attention and instruction as to the importance of giving their children adequate care, how much more necessary is such advice indicated for the responsible heads of our contagious hospitals who permit exposure to contagion in the hospital and then permit children to go forth as carriers of disease to their homes!

Home hygiene is of radical importance. Institutional hygiene is equally essential. Our institutions appear to be lacking some co-ordinating power that will join the home and the institution in such a way as to protect the home and decrease the shortcomings of the institution. Apparently, some systematic, organized plan for follow-up work is particularly necessary in hospitals caring for children. When the institution chances to be devoted to the care of children suffering from contagious diseases, such care being given in the interest of the community, there is a logical necessity for the establishment of an effective system of follow-up care during convalescence, and until normal health is, not alone assured, but achieved.—*Medical Review of Reviews.*

THE TONSILS IN RELATION TO SYSTEMIC DISEASES.—In the *Journal-Lancet* of April 1, 1915, Parker, in an article on this topic, reaches these conclusions:

1. The size of the tonsil is of negative importance.

2. A small submerged tonsil with crypts covered over may be most dangerous.

3. In recurrent tonsilitis, regardless of their size, the tonsils should be removed.

4. Tonsils should be removed from tuberculous children, even though they appear normal. The writer would also remove the tonsils from children living in a home with open tuberculosis.

5. A remnant of a tonsil left after incomplete removal when covered by a scar becomes a most dangerous focus of infection.

6. Cheesy, foul-smelling crypts should be eradicated, or good drainage established by splitting the crypts

7. Perfectly normal-looking tonsils with no history of tonsilitis are frequently found to exude pus upon pressure.

8. Ragged, spongy tonsils are nearly always infective.

9. In all systemic infections in which diligent and competent search fails to remove other source of focal infection, the tonsils should be removed.

10. Individuals known to be sensitized to streptococci should have the tonsils removed as a prophylactic measure.

A culture taken from the interior of the tonsil after removal may be made use of for making vaccine for possible future use, which, in some cases, may be of inestimable value.

Focal infection in the tonsil should be treated by complete enucleation. There is no physiological reason why a part of the tonsil should remain.

It is not sufficient to find one focus of infection in a given case, but most important to find all foci of infection. It is therefore necessary in many cases to co-operate with the dental surgeon, the aurist, the rhinologist, and the genito-urinary or other regional specialist. However, to the internist, pediatricist, or the family physician should fall the responsibility of co-ordinating these facts, dictating the necessary operations and future treatment.

THE TEST OF THE CURE OF GONORRHEA IN THE MALE.—Wolbarst (*New York Medical Journal*, January 23, 1915) concludes that no patient can be declared cured of gonorrhea unless the following tests have been carefully and repeatedly performed:

Microscopic and cultural examination of the centrifugated morning urine, as well as the washings from the irrigation of the anterior urethra.

Microscopic and cultural examination of the urethral discharge, whether spontaneous or artificial.

Microscopic and cultural examination of the massaged secretion of the prostate and seminal vesicles.

Urethoscopic examination of the anterior and posterior urethra.

Complement fixation test.

Skin reaction and hypodermic injection with gonococcus vaccine (still *sub judice*).

Should all of these tests prove negative repeatedly, we may then feel that as far as present knowledge permits the patient may be declared cured; but the physician cannot assume the full responsibility and guarantee the cure. The patient himself must assume that responsibility.

A RATIONAL DIET FOR TYPHOID FEVER.—Cornwall in the *Medical Record* of October 3, 1914, makes a report on two hundred consecutive hospital cases of typhoid fever well fed.

The treatment other than dietetic of the 200 cases of typhoid fever, whose report forms the basis of this paper, was conservatively symptomatic. For high temperatures, cold or tepid sponge baths were given during the first three years of the period, but not during the last year; during the last year no attempts at reducing the fever were made, either by cold water or by other agents. For diarrhea and tympanites, the diet was reduced to barley-water alone, or water alone, or all food was temporarily discontinued. For intestinal hemorrhage, the diet was reduced to barley-water alone, or all food was temporarily discontinued, and opiates were given, and usually calcium lactate or chloride also. For perforation of the intestine, all food was discontinued, and the case was referred to the surgeons for operation. For restlessness and delirium, bromides were given, rarely opiates. For myocardial weakness, strychnine and strophanthus were given in small doses. For constipation, a simple soap-suds enema was given every second day.

The following clinical observations were made on the cases in this series:

1. The proportion of cases showing severe types of the disease, taking in account the entire period of over four years and the whole number of cases, appeared to be about the average found in general hospitals with public services in poor parts of the city.

2. Tympanites was practically unknown in this series of cases. If a patient came into the hospital with tympanites, unless he was moribund, it soon disappeared. This was one of the most striking observations made in connection with the use of this diet. It is interesting and instructive to compare with this series of 200 cases, in which tympanites practically did not occur, a series of 100 cases treated by the writer in the same two hospitals between July 8, 1906, and August 31, 1908. In that earlier series of cases, which were treated essentially in the same way as the present series with the exception of the diet, tympanites was a prominent symptom, occurring to a notable degree in nine cases; and the mortality in that earlier series was 14 per cent. as against 9 per cent. in the present series.

3. Intestinal complications were less frequent than was to be expected from the average severity of the cases in this series. Intestinal hemorrhage was noted in nine of the 200 patients, of whom three died, and perforation of the intestine occurred in two, both of whom died. In the earlier series of 100 patients cited above for comparison, who were fed on a different diet, intestinal hemorrhage was noted in seventeen, of whom ten died, and perforation of the intestine in two, both of whom died.

4. High fever and delirium, and also extension of the febrile course to four or more weeks, occurred with unusual frequency in the epidemic of the last of the four years which this series covers, yet the mortality in the cases of that last year was less than in those of the preceding three years: only two patients died out of sixty who were treated between June 15, 1913, and August 12, 1914, and both of these were moribund on admission to the hospital, dying, one in two days of pericarditis, and the other in five days of myocarditis. It is interesting to note that the use of cold water appli-

cations to reduce the fever, which previously had been a routine procedure, was discontinued. The patients seemed to do better without the antipyretic treatment; cases showing severe types of the disease were common, but they were unusually free from complications.

5. Marked emaciation was not a prominent symptom, except temporarily in cases with extreme toxemia. Twelve patients who were admitted to the Norwegian hospital between September 10, 1913, and October 25, 1913, were weighed when they were discharged from the hospital, which was as early in convalescence as could be considered reasonably safe. These twelve patients were not selected cases, but were taken in regular order, with the exception of two who escaped from the hospital before they could be weighed. They showed, on the whole, a rather severe type of the disease, a type which prevailed largely in the epidemic of 1913, and was characterized by a prolonged febrile course; the fever in these twelve cases, including recrudescences in two cases, averaged in duration 34.5 days. The average weight of these twelve patients when discharged from the hospital was 138 pounds, and their average height was 5 feet 6½ inches. Seven of them were able to tell what was their regular weight in health; it averaged 144 pounds, and their average weight when discharged from the hospital was 137.5 pounds.

THE PROGNOSIS IN AURICULAR FIBRILLATION, by H. E. B. Pardee.—We have a fair idea of the amount of restricted activity imposed by different lesions of the cardiac valves, but we are only lately coming to realize that an irregular heart does not seriously cripple the individual. Sinus arrhythmia we know may be disregarded and usually looked on as normal; extra systoles do not seem to lead to hypertrophy or cardiac failure, even when constantly present over long periods of time; but the continuous irregularity of auricular fibrillation has been considered a grave abnormality of function with poor prognosis. The inception of fibrillation comes on very suddenly, with the prompt appearance of symptoms of considerable severity. On attempting moderate exertion, the patient's heart rate increases, and dyspnea, palpitation, and precordial discomfort appears. Without treatment, the course is one of progressively increasing limitation of activity. The heart cannot maintain its efficiency with the shortened diastole resulting from the rapid ventricular rate; it tires more and more easily, and finally is completely unable to carry on a sufficient circulation. Under energetic treatment with digitalis, however, the cardiac failure is promptly corrected, and the reason why the continuous irregularity of auricular fibrillation has been looked on as causing a poor prognosis is because of the stopping of the treatment as soon as the patient recovers from an attack of acute cardiac failure. By continuing the digitalis in sufficient quantity to keep the heart slowed to about seventy beats per minute, a recurrence of the failure will be prevented. Seven illustrative cases are cited in which the patients have remained under treatment without cardiac symptoms for periods of from seven months to three years. Since these cases are all complicated by conditions of considerable gravity, and since the patients have performed considerable physical exertion so long as the heart was maintained at a slow rate, it is concluded that the irregularity, *per se*, adds little or nothing to the gravity of the prognosis.—*Jour. A. M. A.*

CHRONIC BACKACHE.—The subject of chronic backache in women is treated by Lovett in a recent article (*Journal Am Med. Assoc.*, 1914, lxii, 1615). After eliminating tuberculosis of the spine, organic nervous disease, and the results of spinal fracture, three important etiologic classes can be identified as follows: (1) Disease or displacement of the pelvic organs; (2) traumatism to the back; (3) arthritis of the spine. In addition to the above cases, however, there still remains a large group which some regard as *static* in origin, due to overstrain of the posterior musculature, while others regard it as due to strain or relaxation of the *sacro-iliac joints*. Lovett rejects the latter explanation for most cases and believes that the great majority are really static in origin and are due to defective lateral balance or to defective anteroposterior balance. The former factor is caused by a difference in length in the two lower extremities, the latter by a large abdomen, by flat-foot, or by a relaxed attitude. In most cases relief is afforded by correct shoes and corsets. In the mixed cases (caused by both pelvic organ displacement and by static conditions), the author advises trying mechanical treatment before resorting to operation, unless gynecological treatment is clearly indicated primarily,—in which case mechanotherapeutics may be subsequently necessary to produce a complete cure.

THE PHENOLSULPHONEPHTHALEIN TEST.—Tracy (*Surgery, Gynecology and Obstetrics*, December, 1914) summarizes his work on this subject as follows:

The dye appeared in the urine in from five minutes to forty-two minutes, the average being ten minutes and eighteen seconds.

The average output for the first hour was 34.27 per cent., for the second hour 20.83 per cent., and for the two hours 55.1 per cent.

In 91.7 per cent. of the tests the output was greater in the first hour. In 8.3 per cent. of the tests the output was greater in the second hour.

In 20 per cent. of the tests there was four per cent. or less than four per cent. difference between the output in the first and second hours.

Five cases, with the lowest phthalein output in the series, were subjected to major operations and had a normal convalescence.

Other cases with a much higher phthalein output had a complicated convalescence, with evidence of renal disturbances.

One case, with phthalein output of 53 per cent., died of uremia in less than two months.

Another case, with a phthalein output of 72 per cent., died of uremia in less than one month.

Another case, with a phthalein output of 55.5 per cent., died in the hospital of uremia fifty-two days after operation.

Another case, with a phthalein output of 87.5 per cent., died in the hospital of uremia five days after operation.

In some cases the phthalein output was less after the patients were placed in bed and the excretory organs toned up; in other cases the output increased.

In determining the functional activity of each kidney the test should be applied several times and the average taken. The result should then be checked up by other tests.

It does not seem possible to work out the minimum percentage phthalein output by which it will be safe to undertake surgical operations, nor is it possible from the phthalein test to determine what cases should or should not be subjected to operation. The writer believes it will never be possible to determine this point by any laboratory test, as the functional activity of a kidney varies under numerous circumstances and at different times.

In determining whether or not a patient should be subjected to operation, the history, clinical symptoms and physical examination are of much greater value than any renal functional test yet devised.

The phthalein test used in conjunction with the clinical symptoms, history, and physical examination is of value. A small percentage output should put the surgeon on his guard and cause him to study the patient most carefully before undertaking an operation. The phthalein test should be used only as one of the many methods of investigation in ascertaining the condition of the patient.

TUBERCULOSIS AND PREGNANCY.—Elmer H. Funk, of Philadelphia, thinks that the tuberculous woman should be advised against marriage and conception, and that pregnancy occurring in one with an active lesion should be promptly terminated. The methods of accomplishing the latter call upon the judgment of the experienced obstetrician. (*Therapeutic Gazette*, March).

The question arises, Should one with tuberculosis ever marry or conceive? Even in the presence of an apparent cure the occurrence of pregnancy entails a risk, and as such in the majority of instances should not be taken. In the individual case the presence of a good family and personal history, an early lesion (lesion limited to slight infiltration of apex of one or both lungs, with slight or no constitutional disturbances, with slight or no elevation of temperature or acceleration of pulse at any time during twenty-four hours, with no tuberculous complication), and ample willingness and means to undergo treatment, make it reasonable to expect a cure. A patient may be considered apparently cured in whom for a period of two years, under ordinary conditions of life, all constitutional symptoms and expectoration with bacilli are absent. Even in such cases pregnancy must be considered a risk and should not be lightly undertaken unless competent medical supervision is obtainable during the entire gestation, and ample means afforded for the maintenance of a most favorable hygienic regime.

CONGENITAL PYLORIC STENOSIS.—Roland Hill. (*Surgery, Gynecology and Obstetrics*, May, 1914).—Until the last few years, very little has been known of this condition, these cases having been treated for marasmus. The frequency of its occurrence, about one case in every two hundred babies, makes it a disease of much importance. The pathology of the condition consists primarily of great enlargement of the pylorus caused by hypertrophy of the circular muscle. This causes an obstruction of the pyloric opening which may be more or less complete. The stomach becomes very much enlarged and the intestines small and shriveled. Scudder holds that the obstruction is an anatomic one and not dependent upon physiologic changes. Its cause is unknown, but heredity seems to be a

prominent factor. The age of onset of this disease is usually between the third and sixth weeks of life. The symptoms vary according to the degree of obstruction and the principal ones are: 1, vomiting; 2, constipation; 3, gastric waves of contraction; 4, tumor. The vomiting is the first symptom to attract attention and at first is slight but gradually becomes worse and worse in spite of all dietary and medicinal treatment, and is often projectile in character. Loss of weight is very rapid, and constipation is marked and in severe cases may be absolute. On inspection the upper abdomen is seen to be enlarged, but the lower part is narrow and empty. The outline of the stomach may frequently be seen and the muscular waves of contraction which are soon seen are pathognomonic of this condition. These waves which usually occur after the taking of food pass from left to right across the epigastrium.

The treatment of congenital pyloric stenosis may be either medical or surgical. The medical treatment consists in feeding through a tube, as in some of the spasmodic cases the food may be retained in this way. In some cases nutrient enemata of whey or other foods give temporary relief. When these cases are studied from a surgical standpoint, there are several important factors to be considered. Infants stand the shock of operations badly. They are prone to infections, and their reparative power is so slight that the wounds may simply fall apart when one would expect them to be entirely healed. The question of when to operate in these cases is also a vital one. Scudder states that an operation is indicated whenever a distinct tumor is palpable and also in those cases of spasmodic variety where improvement does not follow intelligent medicinal treatment. The operations recommended in this condition are Loret's operation or divulsion of the pylorus, gastroduodenostomy or pyloroplasty, and gastrojejunostomy. At the present time the posterior gastrojejunostomy is regarded as far superior to any other operation. It is inadvisable to use strong antiseptics in the preparation of these cases, simple cleansing with soap, sterile water and alcohol being preferable. Ether is the best anesthetic. The incision is best made to the left of the median line and rather low on account of the relatively large size of the liver. The usual Mayo-Moynihan operation is done. In the infant, however, the bowel is very fragile and it is necessary to use the finest needles and suture material. The bowel is usually so shrunken that every care must be taken to avoid a kink. The results obtained by treating these cases surgically were at first anything but satisfactory, but increasing experience, earlier recognition by the pediatrician, and operative intervention before the vital powers of the child become too far exhausted have led to some most brilliant results in this comparatively new field of surgery.

W. A. VAN DEVEER, M. D.

TUBERCULOSIS IN THE NEW BORN.—In a paper on Tuberculosis as a disease of the new born printed in the April, 1915, number of *Amer. Jour. of Dis. of Children*, Clifford G. Grulee, M. D., and Frog Harms, M. D., Chicago, said that, in the diagnosis of this affection little can be expected from the ordinary tests. In the newborn the Pirquet test has proven negative almost without exception. Zarfl reports a positive stitch-reaction in a baby 17 days old. Recently at the County Hospital they had been able

to obtain a positive Von Pirquet reaction in a premature infant, 16 days old, whose mother was in the Tuberculosis Hospital. In another instance the reaction was positive on the 19th day. This, however, would give little encouragement in the first few days of life, and hence the tuberculin reaction must probably be disregarded as a definite diagnostic means at this time.

Since, in many instances, tubercle bacilli are found in the blood, a blood culture, or the injection of blood into animals might be suggested. This offers three difficulties: first, that of obtaining blood from these young infants; second, the fact that the presence of the condition is rarely suspected, and third, any animal thus experimented on succumbs to the tuberculosis only after the patient. It would seem, then, to be very difficult to arrive at a certain diagnosis in such cases, even though the case were suspected.

As to the prognosis, tuberculosis of the new born has been up to this time always fatal as far as they could tell. The duration of life varies from 24 hours to 25 days.

Of course, treatment at present in a condition of such extreme severity of the nature of which tuberculosis of the new born is, must necessarily be without results.

V. A. H. CORNELL, M. D.

PURULENT MENINGITIS FOLLOWING PENETRATION OF AN EYEBALL BY A FISH HOOK.—The patient, sixty-five years old, had his eye penetrated by a fish hook near the center of the left cornea while fly fishing. The point penetrated the lens. Seven hours later he came under medical treatment and the general practitioner advised removal of the eyeball at once.

Some thirty-six hours after the injury, he was seen by the writer who found a small ragged wound near the center of the cornea. The iris appeared to be covered by a thin layer of pus. There was moderate edema of the conjunctiva. Immediate enucleation was declined. Treatment with irrigation was at once instituted. The following day, as signs were more marked, the wound was opened and pus evacuated. Less than three days after the injury, enucleation was consented to and performed. On opening the eyeball, a thin, grayish line was found extending from just behind the lens almost to the optic nerve. About twenty-four hours after enucleation, symptoms of meningitis set in. Two days later lumbar puncture showed very cloudy fluid and pure culture of pneumococcus. In spite of the injection of anti-pneumococcus serum, the patient died four days after enucleation. The socket remained clean following the operation. A number of similar cases have been reported. Examination of the literature indicates that in these cases, in all probability, the meningeal infection preceded the operation and is not caused by it.

The infection may enter the brain either by passing directly backward along the structures, entering the cranial cavity by the sphenoidal fissure and optic foramen. In this case the base of the brain is most affected. If infection takes place by way of the blood or lymph stream, the post mortem shows involvement in the sinuses and of the surface of the brain. Veasey believes that infection took place by way of the optic nerve in this

case. The longer pus is shut up in the eye the greater is the risk.—*Dr. Clarence A. Veasey. Arch. Ophthal*

WILLIAM SPENCER, M. D.

PUERPERAL TETANUS—Spiegel (Berlin) has reported four cases of puerperal tetanus and has reviewed all cases reported in medical literature. He concludes his valuable article by pointing out that since tetanus is caused by the generated toxins attacking the motor region of the central nervous system, the rational treatment consists mainly in three procedures: 1. Immediate intravenous and intralumbar serum injections in large doses in order to neutralize the unanchored toxin. If serum is not available, we may use until it is obtainable venesection with normal salt infusion and lumbar puncture and irrigation of the canal. Adrenalin injections are said to inhibit the action of tetanus toxin 2. Elimination of the poison from the port of entrance by cleansing the wound, by irrigation and curettement. Seventy per cent. alcohol is the best irrigating fluid because tetanus toxine is precipitated by alcohol and the spores deprived of their toxin by alcohol are no longer dangerous. After curettage an antitoxin tampon should be introduced daily. If the cervix be closed alcohol irrigation must suffice. 3. Suppression of the convulsions by means of intralumbar injections of 5 to 10 c.cm. of a 15 per cent. magnesium sulphate solution. The general condition of the patient should be conserved by means of concentrated food.—*Arch. f. Gyn.* Vol. 103—367.

THEODORE J. GRAMM, M.D.

THE ACTION OF INTERNAL SECRETIONS UPON UTERINE ACTIVITY.—Guggesberg (Berne) has studied the action of internal secretions upon the activity of the uterus and has found that besides the pituitary body other glands having an internal secretion possess an excitory effect upon the motor function of the uterus. This is particularly true of the thyroid gland and of the placenta. Such studies reveal new evidence of the extensive function of the placenta, which besides its effect upon tissue change possesses a potency in the nature of internal secretion. The action of corpus luteum is not so unfold. An inhibitory action is sometimes noted. In other cases an excitory action was observed. This difference is at present not explainable. In the serum there is no accumulation during the onset and continuance of labor of substances determining labor, while from the uterus in labor substances may be extracted which act in a stimulating way upon the uterine musculature.—*Zeitschr. f. Geb. u. Gyn.* Vol. 75—231.

THEODORE J. GRAMM, M.D.

GENITAL TUBERCULOSIS IN CHILDREN.—Graefe (Hamburg) concludes his comprehensive article by saying that genital tuberculosis in female children is not so frequent as is tuberculosis generally in children, nor is it as frequent as in women. It mostly occurs between one and five years, and between ten and fifteen years. It is generally found in association with older tuberculous processes in other parts of the body and is mostly carried through the blood as in the case of women to the abdominal end of the tube and to the uterus, while the ovaries, vagina and vulva are rarely af-

fected. The process mostly begins in the mucous surface only gradually penetrating deeper, tending rather to caseation and hardly ever to fibroid healing. It is frequently from the tube that the disease spreads to other portions of the genital tract, although the latter may be simultaneously infected through the blood. Extension to the peritoneum is more frequent from the tube than reversely, and a primary beginning in the vagina or vulva or a transition from the uropeoetic to the genital tract is extremely rare.—*Monatsschr. f. Geb. u. Gyn.* Vol. 40—574.

THEODORE J. GRAMM, M.D.

THE TREATMENT OF INOPERABLE CANCER—A PRELIMINARY REPORT.—Dr. S. P. Beebe, professor of experimental therapeutics, Cornell University, has published a remarkable article as a preliminary report of some investigations in the treatment of inoperable cases of malignant disease.

The compound of which the remedy consists was originated by Alexander Horowitz, Ph. D., an Austrian biologist and chemist, who asked Dr. James Ewing, professor of pathology, Cornell University, and the author to test its merits. It consists of a powder derived from the seeds, roots, bark or flowers of *menyanthes trifoliata*, *melilotus officinales*, *mentha crispa*, *brassica alba*, *anemone hepatica*, *viola tricolor*, *anthemis*, *fructus colocynthis*, *lignum quassiae*, *urtica dioica*, *radix rhei*, and hedge hyssop. The treatment is conducted by repeated application to the affected parts of a poultice made from the powder, and the administration internally in the form of an extract or as a pill, of certain substances contained in the powder, and was tried on a number of cases in the General Memorial Hospital.

The application of the poultice was followed by an intense reddening of the skin, and, if the application was prolonged in the beginning of the treatment, blistering might be produced. It had the effect of active counter-irritation. The malignant mass in many cases gradually became oedematous, softer than before, and sections of tissue taken from and about the tumor showed that the lymphatics were engorged with leucocytes, and if the skin was broken a profuse serous discharge was observed. The exudate which later on was produced in considerable quantities in the treated area contained large amounts of broken down cancerous material, serum and leucocytes. The latter are mainly of the large and small mononuclear varieties. An improvement in the general condition of the patient was observed at the same time, evidenced by the relief of pain, increased appetite, and a marked improvement in the toxaemia or cachexia accompanying the disease. Some large, open, ulcerated tumors, with infection and disagreeable odor, were markedly influenced and the odor almost entirely disappeared. Extracts of the powder were made and injected both locally and into a vein. If the surface is broken local necrosis results. If unbroken simple shrinking and disappearance of the growth was noted. No useful purpose would be served at present by abstracting the details of cases treated. Attention should, however, be called to the fact that those successfully treated consisted mostly of superficial malignant manifestations such as rodent ulcer, epithelioma, scar cancer and recurrent mammary carcinoma; while cases of more deeply located disease showed varying results, in some instances unfavorable.

Unfortunately the public press has attracted attention to this entirely professional and obviously preliminary communication, with doubtless the usual deplorable results to the afflicted. In how far this irritating application will be found to differ from the host of others with which physicians are familiar remains to be seen. The distinguished names associated with the preparation, of course, give fairer promise for it.—*New York Medical Journal*, May 15, 1915.

THEODORE J. GRAMM, M. D.

PRACTICAL POINTS IN ABDOMINAL SURGERY.—Dalziel (*Glasgow Medical Journal*) considers ulceration of the stomach a serious condition and fatal hemorrhage occasionally follows it. He is of opinion that operation is indicated in recurrent hemorrhage. Temporary hyperacidity of the stomach may follow indiscretion of diet and this condition is intensified by undue retention of the food in the stomach. Alkalies and modification of diet have helped some cases. Tumors of the stomach are for the most part malignant, sarcoma being rarely seen. The symptoms of carcinoma may be extremely vague. There may only be a slight loss of appetite with a gradual inability to take much at any time, accompanied by a gradual loss of weight and strength. The treatment is surgical and should be as radical as circumstances will permit. Chronic interstitial enteritis is characterized by violent colic, vomiting, occasionally escape of blood from the bowel, and constant presence of mucus in the stool. These symptoms recur at intervals and during the attacks of pain there may be a slight rise of temperature. The prognosis is bad and the condition demands surgical interference, resection of the part of the intestine chronically inflamed and thickened being performed. The cases somewhat resemble tuberculous enteritis, also Johne's disease, in which an acidfast bacillus similar to the tubercle bacillus has been found but which does not cause tuberculosis when injected into guineapigs. The etiology of the condition is obscure. Intra-abdominal adhesions occur mostly at the four corners of the abdomen. They may be the cause of enteroptosis as the result of chronic constipation. At times, on account of the obstruction produced, blood and mucus appear in the stool and when on examination a mass is felt, the diagnosis of malignant growth may be made. The treatment is surgical.

OPHTHALMOPLEGIA INTERNA, THE RESULT OF LEAD POISONING.—The patient, twenty-five years old, a painter in a large carriage factory, began to lose his sight. Examination showed vision in each eye, with correction, to be 15-20. Ophthalmoscopic examination was negative, as was also the field. A diagnosis of nuclear lead palsy was made. Iodide of potash was prescribed and also sulphite of magnesia. Rapid recovery took place. Five months later a recurrence set in and the same symptoms were present. Again, under the precautions prescribed, a rapid restoration of sight took place.

Paralyses of the eye muscles due to plumbism are very uncommon. Unthoff states the last forms only a small percentage of the cases of toxic amblyopia. Oliver distinguishes the forms of neuroretinitis: the first, acute, and the second, chronic. With the second form, the field of vision may be that of a typical retrobulbar neuritis. Other symptoms of the condition should be looked for in each case.—*Dr. L. D Brose. Arch. Ophthal.*

WILLIAM SPENCER, M. D.

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APPENDICITIS IN CHILDHOOD.

BY

C. SIGMUND RAUE, M.D.

(Read before the Section of Surgery, Gynecology and Obstetrics of the Homœopathic Medical Society of the County of Philadelphia, May 26, 1915).

APPENDICITIS in early childhood is clinically so closely related to intussusception that the two conditions call for joint consideration. In older children the similarity between the symptoms of appendicitis and pneumonia is often so striking that a differentiation is most difficult. Again, many cases of appendicitis in childhood present such apparently mild symptoms and lack the characteristic tenderness over the region of the appendix that a diagnosis in these cases can only be made by a painstaking study of the history of the case and by laying special stress upon the sequence of the symptoms as laid down by Murphy. In a long series of cases coming under his personal observation Murphy found that in every instance a careful investigation showed that the attack began with abdominal pain, first more or less general and followed by vomiting after which tenderness over the appendix became manifest and lastly rapid pulse and elevation of temperature appeared. I know of no more valuable aid in differential diagnosis than this symptom-sequence of Murphy.

The early diagnosis of both intussusception and appendicitis is most important if the patient is to get the very best chance for recovery. As both conditions are strictly surgical the

ante-operation diagnosis is not as important as the recognition of the fact that the case is one for surgery. The differentiation can however usually be made on the following symptoms. In the first place, in intussusception the age should be taken into consideration; intussusception is common in infancy while appendicitis is rare at this age; on the other hand, the probability for appendicitis is much greater in a child over three years of age than intussusception. The pain in intussusception is greatest at the onset; it may disappear in the later stages or become typically paroxysmal. The localized tenderness of appendicitis is absent and there is not the painful tenesmus of dysentery. The characteristic symptoms may be summed up as sudden onset with pain, vomiting and bloody stools. There is no abdominal distention nor rigidity and peristalsis is exaggerated. Fever may be absent during the entire course; when it does occur it comes late after peritonitis has set in. Often there is collapse from the beginning; sometimes, however, the child shows no signs of a grave illness until serious damage to the gut has developed. A tumor may be felt in the left iliac region or more rarely centrally or on the right side. Sometimes it is demonstrable only intermittently. If the tumor is impalpable there may however be some resistance present. One of the chief symptoms to bear in mind is the persistent vomiting, which at first shows gastric contents, then bile and later becomes fecal. Together with this there is intestinal obstruction with a discharge of bloody mucus from the rectum.

Mild cases of appendicitis may resemble acute indigestion, there being abdominal pain, vomiting, constipation, slight tenderness over the appendix and a moderate degree of fever which readily escapes notice. There is a tendency to recurrence. The more severe cases often begin with a chill, high fever, vomiting, abdominal pain referred to the right iliac region, rigidity and general abdominal hyperæsthesia. The respirations may be high and pneumonia consequently suspected. In pneumonia of the right lower lobe with sufficient pleural involvement to produce pains referred to the right iliac fossa the respirations will be grunting in character and feeble breathing will be detected over the right lower lobe posteriorly. Furthermore, the pain will be found to be superficial in character and the characteristic deep tenderness of appendicitis will be absent. A rectal examination is also an aid in the differen-

tial diagnosis as the inflamed appendix may be palpated through the rectum in childhood on account of its relatively low position and a tender mass can often be demonstrated by this method.

Distention of the abdomen occurs earlier in pneumonia than in appendicitis. A sudden drop of temperature with relief of pain but increasing pulse rate and abdominal distention signifies perforation. This might be mistaken for a crisis of pneumonia but certainly not by the observant physician who is on his guard.

Recently I saw in consultation a case presenting an interesting development in conjunction with an attack of appendicitis. The child, 9 years old, had apparently gone through an attack of appendicitis a week previously, judging from the history, but was convalescing uneventfully when she was suddenly seized with a chill and her temperature rose to 103.4° . The next day the temperature had dropped to 101° and the abdomen was practically negative but she had a leucocyte count of 16,000. She complained of nothing excepting a little general aching. I examined her throat and found that she had an attack of follicular tonsillitis. Naturally our anxiety was relieved.

The prognosis of appendicitis in childhood may be generally stated as being grave. There are a number of reasons for this. In the first place, clinical experience teaches that it is impossible to gauge exactly the extent of the appendicular involvement and its true character from the symptoms and physical signs presented by a given case. Then there is a greater tendency to the development of sepsis and peritonitis and to its rapid spread than in the adult. This is due to the fact that the appendix more readily perforates and that there is less chance for it becoming walled off by omentum and plastic exudate. Early perforation then, septicaemia and rapid spread of peritonitis give to this affection its serious character.

PYLEPHLEBITIS AND APPENDICITIS: SERUM TREATMENT: RECOVERY.

BY

H. L. NORTHROP, M.D., F. A. C. S., PHILADELPHIA.

BECAUSE pylephlebitis is a rather infrequent (more frequent, however, than we are aware of) and a very serious complication of appendicitis, it deserves our careful thought and attention.

Many cases of appendicitis die, but very few, if any, die of the appendiceal inflammation itself,—the majority die of sepsis, the result of the infection and the absorption of the toxic material or, in the unmistakable language of the laity, “blood-poisoning.” Death, in other words, is precipitated by the rapid and unhindered multiplication of bacteria, and the surcharging of the system, through the lymphatics, with a lethal dose of their toxic products, pyaemia resulting. But the lymphatics have a rival, and that rival is the portal vein, or, better, the portal system.

One has but to recall the ease and frequency of septic infection of the cranial sinuses, of the internal jugular vein or veins, (perhaps both simultaneously—I have seen such a case), of the facial vein and cavernous sinus in carbuncle or phlegmon of the upper lip, of the saphenous veins in septic infection of the foot or leg,—one has but to recall these common examples of sepsis travelling through the venous blood stream to appreciate the ease with which the portal system may take up septic products and deposit them in the most natural place under the anatomical circumstances, viz., the liver. When this organ is reached, the havoc usually waged by rapidly multiplying bacteria is made apparent by the presence of the metastatic foci of infection which are, for the most part, beyond the control of all therapeutic measures. Hence, the possibility of this complication in infections of the intestinal tract, occurring most frequently and virulently in appendicitis.

Remember that the venous drainage of the vermiform appendix is into the portal system, that the portal system of veins drains the chylipoietic viscera, viz., the stomach, pancreas and small intestine and, in addition, the spleen and large intestine. Any inflammation of an infectious or septic character involving the appendix may, and occasionally does, spread by travel-

ing through the portal system. This portal system is peculiar in that it begins in the venous capillaries in the wall of the chylolipoietic viscera, and terminates in the capillaries in that largest of all glands, the liver. Hence, infections carried by it from, we will say, the appendix, are apt, even sure, to be deposited in the liver. And this may be offered as an explanation of pylephlebitis, or inflammation of the portal vein (the "gate" vein). A synonym of pylephlebitis is portal pyaemia. This is the commonest cause of abscess of the liver and is a complication or infection occurring anywhere in the territory drained by the portal vein. The abscesses in the liver are usually multiple and due to infective emboli or infective thrombosis of the tributaries of the portal vein.

The symptoms are: Frequent and severe chills, a rapid, or sudden rise of temperature, hepatic pain and tenderness, and jaundice. Pain, tenderness and jaundice may be absent. (A fact worth remembering for diagnostic purposes and one to encourage the early and unstinted use of the appropriate serum.) The diagnosis is more easily made if there are pain and tenderness over the trunk of the portal vein, i. e., along the border of the right rectus muscle, tenderness over the liver, fleeting and remittent jaundice, and rapid emaciation. Frazier (Philadelphia) says that the case may run such a rapid course that the complete clinical picture may not have had time to develop and the true nature of the infection will not be recognized except at the necropsy. If this be true, probably many more cases of appendicitis die of pylephlebitis as a complication than we are aware of.

The primary thrombus is usually found in the lower part of the portal vein, whose tributaries may be filled with, or occluded by, purulent thrombi. The inevitable consequence of such a thrombophlebitis of the portal vein is abscesses of the liver. Unfortunately these abscesses are usually multiple, so that a surgical cure is impossible. Hence we are forced to say that septic pylephlebitis is more easily prevented than cured,—here one ounce of prevention being worth many pounds of cure, and the ounce of prevention consists in the prompt removal of the cause which, in many cases, will be the diseased appendix. Other causes are infections within the portal zone, such as those accompanying hemorrhoids, ulcers and carcinomata of the gastro-intestinal tract, or anything which causes peritonitis within the portal area. Here, then, is the usual

pathologic picture of first, infection, then localized phlebitis, thrombosis, and emboli swept away and deposited in the liver.

Murphy says that pylephlebitis occurs much more frequently than is generally believed; that emaciation is rapid, septic icterus occurs, and in from ten days to five weeks the patient succumbs. These cases are many times operated upon for metastatic peritoneal abscesses, a procedure and humiliation that can be avoided if a careful analysis of the case be made. Murphy says the treatment is ineffectual and should be directed to the comfort and relief of the patient. I believe we ought not to be so easily satisfied as this, however, but should show all the fight that is in us against this dread and hitherto invariably fatal disease. It may be that in massive doses of serum administered early and intravenously there is a remedy which will save some cases. It saved one of mine.

Permit me to report three typical, i. e., recognized cases of pylephlebitis, resulting in two deaths and one recovery.

CASE I.—June 10, 1902. Dr. J. K. W., age 28. Yesterday had three loose bowel movements and pain in right side of abdomen; this morning had three chills; temperature now 102, face flushed, heavy-looking, but not pinched; tongue slightly coated, not flabby, no teeth imprints; no nausea or vomiting; abdomen soft, flat and without muscular rigidity; moderate tenderness in right lower quadrant upon deep pressure; right iliac gurgling. I was undecided between typhoid fever and appendicitis, but had the patient removed at once to Hahnemann Hospital. I decided not to wait for a Widal test, and called Drs. Haines and Goodno in consultation. As the patient was growing steadily more and more toxic an operation was agreed upon. On opening the abdomen I found the appendix situated behind the colon, pointing to the right, surrounded by soft adhesions and by dark-colored, thin, feculent fluid. The distal half of the appendix was jet black, and lustreless; it was removed with difficulty; the wound was packed with iodoform gauze.

During the first twenty-four hours after operation this patient had two chills and continued to have two or three a day for the succeeding two weeks; he became deeply jaundiced. Our diagnosis now was pylephlebitis, further evidenced by enlargement and sensitiveness of the liver, especially the left lobe. Every time a chill would occur the temperature would rise to 104 or 105 and the jaundice would become intensified. He

was given repeated injections of diphtheria antitoxin in addition to other routine treatment. He died July 1st, twenty days after the onset of his attack of appendicitis. I believe that pylephlebitis developed here at the very beginning or, at least, very shortly after the appendiceal inflammation was established.

CASE 2.—July 29, 1911. Is tall, raw-boned, smooth face, high forehead, and looks for all the world like Abraham Lincoln: the similarity is remarkable.

He was brought to Philadelphia from a distance with unmistakable and characteristic symptoms of appendicitis. I operated upon him immediately and found an appendix very much injected and indurated. There were many soft adhesions and there was a considerable amount of pus in the peritoneal cavity. I packed the wound and in six days removed the gauze drainage and sutured the wound. This patient left the hospital in due time and apparently was in excellent condition. In about two weeks he developed symptoms of a localized abdominal infection to the left of the umbilicus, which was accompanied by repeated rigors at irregular intervals, sudden, rocket-like elevations of temperature to 104, tenderness in the hepatic region and remittent jaundice. Although I did not see him at this time I felt warranted in making a diagnosis of pylephlebitis, resulting from the late infection of the peritoneal cavity on the left side.

CASE 3, admitted to Hahnemann Hospital on July 2, 1914. H. McN., age 23. He had classical symptoms of appendicitis and I operated upon him immediately. The condition found was a retrocecal, retroperitoneal, perforated, gangrenous appendix; there was free pus. The appendix was perforated at its middle, where there was a large, hard, fecal, concretion. After removing it I sutured the peritoneal margin to the skin and introduced iodoform gauze and a large-sized wet cigarette drain. Attaching the peritoneum to the skin is a most excellent thing, as it enables the operator to the more easily and satisfactorily find and suture the peritoneal margin should the patient survive and come to a secondary stuture; and it forms a covering and protection for the muscular layers of the abdominal wall, keeping them clean and more or less free from infection.

This patient was promptly placed in an exaggerated Fowler position and continuous proctoclysis administered. He did more than ordinarily well for five days and I was planning to

give him the benefit of a secondary suture, when a chill occurred and his temperature rose to 103 2-5. During the next five days he had six chills, after each one the temperature rising to 103, 104 and 105. At this same time he became deeply jaundiced and complained of tenderness in the region of the liver.

I now asked Dr. Sappington for his advice and help and a blood count showed leucocytes 41,200, polynuclears 90 per cent., lymphocytes 10 per cent. Dr. Sappington also made a blood culture and found the blood to be sterile after twenty-four hours' incubation. Eight days after operation this patient's blood showed leucocytes 24,400, polynuclears 86 per cent., and lymphocytes 14 per cent. Dr. Sappington advised the administration of enormous doses of antistreptococcic serum, and on the fourteenth day after admission injected 100 cc. of Lederle's antistreptococcic serum into one of the median basilic veins. The patient's temperature rose to 106 2-5 degrees after this dose. On the following day 60 cc. were injected, on the next 20 cc., on the next 50 cc., and on the next, another 50 cc., in all 280 cc.

After this the patient's recovery was gradual but sure. I sutured his wound. All signs of either local or portal sepsis disappeared and he was discharged from the hospital twenty-eight days after his appendectomy.

I consider this a remarkable recovery from probably the most serious complication that can occur in connection with abdominal infections, and the employment of massive doses of antistreptococcic serum must be credited with the cure.

PROFESSOR COLEMAN ON PRESCRIBING.—In the discussion anent homœopathic principles and the practice of homœopathy in general the remarks of Dr. Coleman at the Institute meeting this year were particularly valuable and quite correct. The doctor stated that provided the reactive symptomatological basis, in general and in particular, corresponded along the basis of purely sensory feeling, with a drug capable of inducing a similar state we were on the right track. And he is quite correct in the statement so expressed. The pathological findings will fit in admirably. They are just as much an expression of aberrant function, as the phenomena noted by the test tube, the X-ray or what not. All ancillary method should be at our beck however.

THE CALORIC METHOD OF INFANT FEEDING.

BY

CHARLES H. SEYBERT, M.D.

Pediatrist to the West Philadelphia General Homœopathic Hospital.

DURING the past few years the caloric method of feeding infants has been occupying the attention of pediatricists as a substitute for the so-called percentage method, so widely prevalent in this country.

Whatever may have been attained by this latter method in the advancement of infant feeding, it can not be gainsaid that it has driven a large majority of physicians to the indiscriminate use of the patented infant foods by reason of its complicated mathematical formulae.

It would seem that any method more simple in its calculations, with no diminution in its scientific principles and with no increase in infant mortality should be given the preference by virtue of its simplicity.

The caloric method has for its basis the number of heat-units required daily to properly sustain and nourish the infant, in other words it is the amount of food needed to make up for the energy expended and the heat thereby lost and is expressed in terms of calories; a calorie being the amount of heat necessary to raise the temperature of one Kilogramme of water one degree Centigrade.

As is obvious the amount of food depends upon the state of nutrition of the child as well as upon the amount of energy and heat consumed; a very fat infant has less body surface in proportion to its weight and therefore loses less heat from the surface of the body than an emaciated one; the caloric requirement is therefore less in a well nourished infant than in one whose nutrition is poor.

Each ounce of milk ingested by the infant represents a certain amount of heat, energy and growth, or to put it in another form, has a definite and fixed caloric value; these caloric values having been determined upon and taken as a standard, it is a very simple matter to compute the daily caloric need of infants when their food is limited to milk, sugar and the cereal flours.

The following caloric requirement has been found to be a good working rule: Infants up to 6 months of age, of average nutrition require 45 calories for each pound weight daily, while infants from 6 to 9 months of age of average nutrition require 40 calories for each pound weight daily.

Emaciated or marantic infants may require from 50 to 65 calories for each pound weight daily, depending upon the degree of emaciation; given a child of 7 months weighing 15 pounds, its daily caloric requirement would be 40×15 or 600 calories.

It is a matter of judgment to determine at the first examination whether we are dealing with a 40 caloric infant or a 60 caloric infant which becomes a fairly easy matter however after a little experience.

Incidentally I would like to state here the one theory largely due to the percentage method of feeding that the caloric method has exploded, is the very prevalent one of the proteids being the main source of gastro-intestinal disturbance in infancy; this has been found to be a fallacy.

Coming to the caloric values of the foods commonly used in feeding infants we have the following:

Cream	50 calories in each ounce				
Whole milk	20	"	"	"	"
Skimmed milk	11	"	"	"	"
Whey	9	"	"	"	"
Butter-milk	15	"	"	"	"
Whole milk and whey (equal parts)	10	"	"	"	"
Wheat flour	100	"	"	"	" (by weight)
Barley flour	100	"	"	"	" " "
Rice flour	100	"	"	"	" " "
Arrow root flour	100	"	"	"	" " "
Oatmeal	120	"	"	"	" " "

All sugars no matter from what source derived have a caloric value of 120 calories to the ounce by weight.

2 level tablespoonfuls of cane sugar=1 oz. by weight

3 level tablespoonfuls of milk sugar=1 oz. by weight

4 level tablespoonfuls of malt sugar=1 oz. by weight

As a rule one ounce of sugar is needed in 24 hours, seldom .

over one and a half ounces and then only in those infants weighing over 10 pounds.

The quantity of water to be added to the milk and sugar of course depends upon the number of ounces given at each feeding and the number of feedings in 24 hours. The amount of milk having been determined the rest of the food must of necessity be water.

A large infant or one of average size requires from 1 to 2 ounces more at each feeding than the number of months of its age; *i. e.*, a 4 months' old infant would require from 5 to 6 ounces at each feeding.

An under-sized infant should have at each feeding the same number of ounces of food as the number of months of its age.

As to the interval of feeding, most men recommend a two hour interval for all infants under four months of age gradually increasing it after this age up to three hours between feedings. Others, among them Grulee, advocate a four hour interval. Whilst this does well for sick infants it seems to me to be from a practical standpoint a difficult one to handle in well children because of the traditional 2 to 3 hour schedule being so thoroughly instilled in the minds of parents. The safest plan to my way of thinking is to strike the happy medium.

In order that the above remarks may be understood more clearly an example or two may not be amiss.

Given a child 4 months old weighing say 12 pounds.

Forty-five calories required for each pound weight \times 12 the number of pounds equals 540 calories of food required in 24 hours. Subtracting from this the caloric value of $1\frac{1}{2}$ ounces of sugar which is $120 \times 1\frac{1}{2}$ or 180 calories we have 360 calories to be supplied by milk in 24 hours and as there are 20 calories in each ounce of whole milk we have $360 \div 20$ or 18 ounces of milk.

This infant would require about 7 feedings daily of about 5 ounces each, therefore its formula would be:

Whole milk	.....18	oz.=360 calories
Water	.....17	oz.
Sugar	..... $1\frac{1}{2}$	oz.=180 calories

540 calories in 24 hrs.

Another example: Take a child 2 months old weighing say 8 pounds.

Forty-five calories for each pound in weight gives us 45×8 or 360 calories required in 24 hours. Subtracting the caloric value of one ounce of sugar which is 120 calories ($360 - 120 = 240$) we have 240 calories to be supplied by the milk in 24 hours. There being 20 calories in each ounce of whole milk ($240 \div 20 = 12$) we have 12 ounces of milk required in 24 hours.

This child would require 10 feedings daily of 3 ounces each, therefore its formula would be:

Whole milk 12 oz. = 240 calories

Water 18 oz.

Sugar 1 oz. = 120 calories

360 calories in 24 hrs.

During the past three years I have been using malt sugar in the form of Dextri maltose because of its less irritating qualities, which one so frequently encounters when milk or cane sugar is employed.

The use of lime water in the modification of milk is an old method. It is the consensus of opinion of authorities that lime water in the proportion of one ounce to 20 ounces of food (5% solution) has little or no effect upon its digestibility. One of the main reasons for the use of alkalies is to neutralize the acid gastric juices in order that the milk may pass from the stomach in a fluid state without curdling. This can only be accomplished by the use of stronger alkalies than lime water, such as bi-carbonate of soda, sodium citrate or potassium carbonate, in the strength of two grains of each to every ounce of milk.

Let it be understood that these rules apply to well infants only. It would be nothing less than infanticide to give an infant suffering from vomiting, diarrhoea or other digestive disturbances its full caloric requirement; until such disturbances have been overcome weaker formulae must be used temporarily and gradually increased until the child is receiving its proper number of calories of milk and sugar, for until then no gain in weight is to be expected.

BUTYRIC ACID: A PROVING.

BY

DONALD MACFARLAN, M.D., PHILADELPHIA.

THE singular rancidity of butter is one of the ushering-in changes of the process of fermentation. It is caused by the action of an ester, a triglyceride, and it is known by the chemist as butyric acid. When milk sours, lactose is converted into lactic acid by the lactic ferment of various bacteria. The lactic acid is then acted upon by butyric acid ferment, which is contained in the air. It is with this peculiar substance that some recent provings were made under the Constantine Hering Foundation at the Hahnemann Hospital of this city. Pre-medical and Freshman students volunteered for the work and much credit is due the following gentlemen for the undertaking, which in some cases entailed much suffering: N. K. Myers, M. F. Pettler, W. I. Hamer, W. L. Hobart, C. W. Ursprung, C. H. Kistler, H. D. Webb and J. A. DiMedio. Before setting out upon the trail of its pathogenetic sphere, however, an accurate daily account was kept up for some time to get an adequate inkling of the man, both as a psychic and vegetative unit, as it were. This bore a preliminary confirmation of what we started with, the mental and physical terrain into which was later sown the seed of a crippling agency.

The preparation used was the 3d dynamization. It was given every two hours, from the time of morning arising to bedtime, and was discontinued at night. The results were surprisingly uniform as the men kept doggedly at the work in most instances and as the proving was carried on practically in more or less perfect continuity for seven weeks or thereabout, a clear cut and invaluable pictured pathogenesis was cut out.

The minutiae will not be gone into, in this article, and only enough data to enable the reader to rapidly prescribe the drug, when mirrored by its effects on the healthy one sees its actual analogue at the bedside of the patient.

THE MENTAL AND MORAL SPHERE.

Pronounced sleeplessness and dreams of a serious nature while asleep. Removed in the prover and induced in the

healthy, a disposition to constantly worry over trifles. Impulsive thoughts of suicide. The mental sphere of this drug is very pronounced; it seems to rapidly and effectively banish a generalized nervousness in those by bent of a nervous nature, and at the same time to quickly induce a strong nervous tendency in the uncommonly phlegmatic. In them it causes disturbing night restlessness and tossing about, absence of sleep, and a constant state of fear and nervousness. From this symptomatology it is at once seen that it bears striking resemblance as far as the mind and disposition is concerned with the following: *aconitum napellus*, *arsenicum album*, *aurum metallicum*, *cypripedium*, *coffea cruda*, *scutellaria lateriflora*, *valeriana officinalis* and the two *viburnums*.

HEAD AND EYES.

Pain over the forehead, down to the back of the neck, and aggravated on pressure. Severe headache, which extended from the right eye to the central portion of the head on the right side. The headache is worse when going upstairs or on rapid motion. It was of a throbbing type. Headache over the left eye which extended backwards. *Man has a headache which makes him apprehensive about trifles.* A dull and hazy ache in the head nearly all the time, making his head feel hot and warm. Headache concentrated low down in the head with violently pulsating carotids. Looking at one thing any length of time noticed disturbance in vision. On ocular exertion objects which he was drawing ran together (this rare ordinarily when using his eyes much). The head and eye symptoms are somewhat like belladonna. The eye symptoms of the latter are decidedly more important in every way, however.

GASTRO-ENTERIC TRACT.

The symptoms here are many and severe. Pains in the abdomen below the umbilicus very marked. Poor appetite, in fact does not care to eat at all. Passes a lot of gas. Severe cramps at the pit of the stomach—are dull in character, and would come and go. Stools become small in size, are hard, and require much urging. Cramps in stomach and the passage of much gas which gives relief. Stomach seems overloaded and heavy although very little food was taken. Crampy

pains in the stomach at night a reliable indication. *All the symptoms are worse at night.* Belching and the passing of wind are constantly complained of by the provers. Cramps in the abdomen below the umbilicus and intermittent constantly elicited. Pains often after meals in the belly. Desire for stool but the only thing passed was gas—a very reliable indication. Constant and colicky pains below the umbilicus keep up for days in the prover. Distension with gas after eating. This is passed per rectum, giving relief. Bowels are made very irregular in the healthy prover, normally, quite regular. Stool accompanied by pain. Much belching and a bitter taste during and after belching. From this symptomatology it will be seen to resemble, at least as far as the alimentary tract is concerned, the following remedies: cuprum, colocynth, plumbum and opium along the line of the violent crampy state, whilst from the viewpoint of the elaboration of gas with great belly distension we see resemblances in carbo vegetabilis, carbo animalis, terebinthina, phosphorus, and opium.

BACK AND EXTREMITIES.

Tired feeling and a dull pain in the small of the back which was aggravated on walking. This a very prominent and reliable symptom elicited. In fact it lasted in one prover for twelve days about running. He complained of it all day long. Dull pain, and a very weak and tired feeling in the back in the lumbar region. The tired feeling increased on coming up steps and somewhat relieved by stretching. A dull pain in the right arm, seemingly in the nerve—runs in the biceps muscle to the middle of the forearm. Dull pain in the back—there is a tired and weak feeling with it. If he walks fast or goes up steps the steady pain becomes quite intense and *much* sharper. After walking in the afternoon becomes very weak in the back. Pain in the ankles and up back of leg mostly in the evening—of a dull character. Has had it a long time. Pains in the back particularly in the left side. The legs feel very tired and they ache so it almost pained him. The pain was constant too, and always worse at night. Dull pain for weeks *low* down in the back and extremities. At nights mind very active, whilst he is tired physically. From this it will be seen to liken itself to several drugs quite accurately. The mental depression and severe backache points in its analogy to aurum

muriaticum. The tired and draggy backache with some heaviness in the limbs and the loss of appetite causes one to think of *cimicifuga racemosa*. The backache and the peculiar abdominal distension is of course seen in *terebinthina* as well as butyric acid.

CUTANEOUS.

Perspiration from very slight exertion. Excessive perspiration of the feet (never had this before in his life like it is now). Abnormal sweating of the feet, the odor of the same being offensive. This latter condition is very marked and has been confirmed recently in practice. In one very aggravated case of Dr. George J. Alexander the result was rapid and very brilliant. Butyric acid also produces a peculiar crumbling of the finger-nails—this is very highly characteristic of the action of the medicine. From the above considerations the drug bears a likeness in this field of external or cutaneous involvement to silica.

URINARY AND SEXUAL.

The urinary symptoms were not at all marked in the cases directly under my observation and the writer considers them distinctly minimal in comparison with other more striking effects and other rubrics. In one prover, however, the urination became peculiar in that there was developed long intervals and a large quantity voided at each micturition. Normally the prover had voided a small quantity and often. In the Hahnemann College provers there was no evidence of an effect on seminal emissions although the writer has learned of another worker in this field producing a frequency of emissions. This observer was a thoroughly capable observer and this is most probably a good indication, although personally none of my provers developed that condition in any way.

TWO LABORATORY TESTS WHICH ANY PHYSICIAN CAN DO.

BY

JOHN G. WURTZ, A.M., M.D.

(Read before the Germantown Homœopathic Medical Society, June 21, 1915).

LIKE nearly all chemical analyses of urine the tests for urobilinogen and urobilin are not really new. And though there exist fairly accurate qualitative and quantitative methods of their estimation, the significance of these products has not been generally agreed upon, chiefly because their origin is still in dispute.

Briefly the theories of urobilin formation are five: The hepatogenous one teaches that urobilin is formed in the liver from blood or bowel pigment carried through the system and eliminated by the kidneys. The hematogenous theory attributes the presence of urobilin to blood pigment from destroyed or broken up red cells. The third theory is the nephrogenous one which claims that bilirubin in the blood is changed into urobilinogen by the kidney cells through which it passes when extracted from the blood. That blood or bile pigment is reduced to urobilin in the tissues and then eliminated, is the histogenic theory. The enterogenous theory is that the bile which is broken up in the intestines is absorbed by the portal capillaries and carried to the liver; if the liver is normal the major part of the urobilin is broken up or formed into blood or bile pigment. If the liver is diseased this change does not take place, and the urobilin passes into the general circulation. This theory is sustained by the absence of urobilin in urine in any quantity in cases of obstruction of the common duct.

Though theories vary somewhat it can be safely assumed that as a rule the presence of urobilinuria is indicative of the fact that bile is reaching the intestines, and that large amounts of urobilin in the urine usually mean that there has been either abnormal destruction of red blood corpuscles, or an insufficiency of the liver to perform its normal function.

The test for urobilinogen is simple. To about 5 cc. of freshly voided urine (the specimen should be no more than six or eight hours old) add 1 cc. of a reagent which consists of dimethylamidobenzaldehyde para, 8 gm., Concentrated hydrochloric acid 80 cc., and water 200 cc. In the presence of urobilinogen there results a cherry red color which increases

in intensity on standing and reaches its maximum in thirty to sixty minutes. The paler the cherry color the smaller the amount of urobilinogen. The reaction is hastened by gentle heat; but this is poor technique.

Should the specimen of urine be older than ten hours, test for urobilin—which results from the oxidation of urobilinogen—in the following manner: Add to 10 cc. of urine in a test tube, a few drops of tincture of iodine, to convert all the urobilinogen into urobilin. Then add Schlesinger's solution (a saturated solution of zinc acetate in 95% alcohol) about equal parts and shake. Then add a few drops of ammonia, shake and filter. If urobilin is present the filtrate will show a greenish efflorescence.

Urobilin is increased in many pathologic conditions, namely, infectious diseases, diseases in which there is wide spread hemorrhage traumatic or otherwise, pernicious anemia, malaria, cardiac decompensation, various forms of liver and gall passage diseases, and in intoxications from chloroform, lead, carbon monoxid, and alcohol.

There is a close relation between the increase of urobilin in the urine and disturbance of liver function. The intestinal formation of urobilin from the decomposition of bile present within the bowel is the most accepted theory of urobilin's origin, though there is evidence that the diseased liver may originate urobilin either directly as a product of its cells, or indirectly from the decomposition of bilirubin within the bile passages.

Clinically it has been observed that urobilinuria is present in hepatic cirrhosis and is quite constant in the hypertrophic stage. Passive congestion of the liver due to cardiac decompensation gives urobilinuria. If jaundice is due to obstruction, urobilin is absent from the urine. In pneumonia, the early appearance of urobilinuria points to a grave prognosis. In carcinoma it is of no value. Infections which cause parenchymatous changes in the liver cause urobilin to appear in the urine. In nephritis the kidneys may not excrete urobilinogen, so if large amounts of urobilin are present in the urine it means, roughly, that the kidneys are functioning.

The second test which any physician can do, is the estimation of renal function by the phenolsulphonephthalein method. Generally speaking the estimation of renal function capacity is ascertained in one of two ways. Either by tests of retention

through quantitative estimation of the concentration of certain substances in the blood—ions by electrical conductivity, molecules through cryoscopy, urea, incoagulable nitrogen and cholesterin; or by tests of excretory power by the quantitative estimation of the excretion of various substances in the urine, as: methylene blue, indigo carmine, rosaniline, sulphonephthalein, potassium iodide, lactose, salicylates, sodium chloride, urea, sugar following phyloridzin and the enzyme diastase. All have their special value, and no one test always yields the desired information. Where only one test is used, and especially outside of the research laboratory, the best is the phthalein test. This is easy of application, simple in technique, reliable and gives such a range of information that it can be considered the best general test of kidney efficiency.

Phenolsulphonephthalein was prepared first by Remsen. It is a bright red crystalline powder somewhat soluble in water and alcohol, but readily soluble in the presence of alkalis. The drug as determined by Abel and Rowntree, is non-toxic and excreted with extraordinary rapidity, appearing in the urine within a few minutes after injection. In alkaline solution a brilliant red color is produced.

The technique of the test is as follows: Twenty to thirty minutes before the administration of the drug the patient is given to drink 300 to 400 cc. of water (one glassful) to insure free urinary secretion. Just before the injection the patient urinates or is catheterized. Noting the time, 1 cc. of a carefully prepared solution of phenolsulphonephthalein containing 6 mg. to the cubic centimeter, is given intramuscularly into the lumbar muscles. At the end of an hour and ten minutes the patient voids urine or is catheterized. This is repeated one hour later, or two hours and ten minutes after the injection. The specimens are kept separate. They are made strongly alkaline by adding 25% solution of sodium hydroxid, which insures the maximum intensity of color. They are then diluted to one liter, thoroughly mixed and a small portion filtered to compare with the standard which is used for all estimations. The standard is an alkaline solution of the drug, 6 mg. in one liter of water. The comparison is made by the Rowntree and Geraghty modification of the Autenrieth-Königsberger colorimeter, or the Dunning's graded capsules, or by a simple home-made device. The percentage of the drug excreted is then estimated.

When the collected urine has been made strongly alkaline the phthalein estimation should be made within a very few hours, as the red color gradually fades. When it is desired to make the estimation hours after the specimens are voided, it is well to render the urine distinctly acid, under which condition the phthalein remains unchanged. It is then made alkaline just before the percentage calculation. When the percentage of phthalein excreted is very low, it is best not to dilute the urine up to one liter; but to keep the drug concentrated, dividing the percentage estimated by two or four, according to whether the specimen was diluted to 500 cc. or 250 cc.

Normally when given subcutaneously the drug appears in the urine in from five to eleven minutes. The addition of ten minutes to the hour is allowed for the first appearance of the drug in the urine. When given intravenously there is a very rapid appearance of the drug in the urine and also rapid elimination.

Following the intramuscular injection 50% of the phthalein is excreted in the first hour and a total of 60% to 80% in two hours. In health, the elimination is practically complete in two hours, only a trace being present in the third and fourth hours. The amount of urine excreted is immaterial so far as the drug percentage is concerned. Nor does the excretion of the drug run parallel to that of the urine. Diuretics do not affect the output of the drug.

A remarkable feature is the specificity displayed by the kidneys toward phthalein. The dose given yields a dilution in the body of one in ten million, still the normal kidney will in one hour extract 50% of the drug from the blood, sometimes as much as 3 mg. (one-half the dose) being excreted in 12 cc. of urine. The urinary concentration is about 2500 times that of the blood. The same concentration is presented to the liver, pancreas, salivary glands, etc.; but here the special capacity is lacking. Experiments show that though the glomeruli excrete some of the phthalein, the tubules are mostly concerned in its elimination.

In disease the drug is excreted with difficulty and the loss of excretory capacity as indicated in a low percentage reading, furnishes a fairly accurate index of renal efficiency or inefficiency. It must be remembered that while the phthalein output indicates fairly accurately normal or abnormal renal function, it does not diagnose kidney or other disease. It only

gives the excretory power of the kidney, leaving the clinician to recognize in what conditions this power is a real criterion of the patient's actual condition. Clinical or functional studies alone are inadequate from the diagnostic and prognostic standpoint. Considered together, however, they are of great mutual value. In chronic interstitial nephritis a knowledge of renal efficiency is of great aid; but it will not tell whether the patient will die of a vascular accident, as apoplexy. Then, too, a single test should not be considered conclusive, as the rapidity of loss and recovery of excretory function in acute nephritis shows. Along prognostic lines, repeated tests are especially valuable.

In acute nephritis the test is not of great value, since—as has been said—a rapid depression may shortly be followed by an increase of function. On the other hand, the phthalein test is of great value in chronic parenchymatous nephritis. When there is a marked decrease in drug output, marked renal changes are present, and when excreted in traces or not at all, a grave prognosis should be given.

In chronic interstitial nephritis the test is of great value, revealing the degree of destruction of renal substance. It diagnoses impending uremia when other signs are absent and diagnoses uremia from other conditions simulating it. Low excretion may indicate a renal condition when the blood pressure is normal and the eye-grounds negative. Here too repeated tests help. When the phthalein output is fair—say 30% in two hours—the immediate prognosis is fair, so far as the kidneys and uremia are concerned.

In cardiac and cardio-renal disease the phthalein test is helpful in determining to what extent renal insufficiency is responsible for the clinical picture. If the excretion increases following heart remedies, the low percentage was due to a passive congestion of the kidneys. If the heart improves and the drug excretion remains low, the kidneys are involved.

The results vary considerably in cases of polycystic kidney. And in diseases other than renal there is—as so far studied—no marked reduction of the phthalein excretion.

As a conclusion to this paper, I would say that these two tests are of value in diagnosis (if not from a positive, from a negative standpoint) and especially the phthalein test, in prognosis. And further that with but little effort they can be done by any physician.

PLAY—A FACTOR IN MENTAL DEVELOPMENT.*

BY

ANSON CAMERON, M.D., CHICAGO.

PLAY is nature's method of education. It is the fundamental form of all developmental activity. Play is the child's chief business in life. He plays to live and lives to play. Play is superior to work as a developer of the nervous and mental powers used in work because of its emotional content. Play is spontaneous, more intense, and because of the sustaining power of enthusiasm postpones the onset of fatigue and reduces the consciousness of effort, which characterizes the volitional attention of work. Enthusiasm is the spirit of healthy childhood; it is the very essence of play and carries the burden of sustained volitional effort until the capacity for sustained effort is established as a habit.

The child's natural life or play is the best developer of its capacity to work. The fear that the love of play will interfere with the love of work and so undermine character, is groundless. The difference between work and play is often wrongly conceived. The difference, generally, is in the degree of physical or mental motives. Young people often do their hardest work while playing; and even to older persons, with interest, obnoxious work may become play. Work is important, but it is only one of the important things.

Play develops organic vitality, nervous energy and skill and interests specific attention and enthusiasm together. Work is less effective, it lacks spirit and develops only in a negative way when the child does things foreign to its nature in obedience to the commands of adults. It is always the spirit that plays. Such lack of activity depresses vitality and inhibits the development of the nervous system, play instinct and experience. Vivid life is possible through play.

By realizing a progressive series of aims in play, the child learns how to work and to achieve life through work. From an educational standpoint, play develops all the fundamental powers of the plastic growing organism; as internally impelled activity, play is practically the only method of education during infancy. Too often the mistake is made of forcing

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a child mentally or lavishing too many toys upon it, thus teaching it to constantly expect diversion instead of developing the child's own imagination and resourcefulness.

Play retains a conspicuous place during youth, and even in adult life, as indicated by the modern attitude towards more recreation and leisure for everybody; a great playground movement is going on all over the country. The playground should be organized, supervised and recognized as a vital and co-ordinate branch of our scheme of education. Plays are progressive, and that which is the greatest fun at one time is not at another, because life itself is progressive.

In the past the attitude toward recreation in America has been that of the Puritan to whom joy is danger and the pleasure side of life reduced to the lowest possible point. Modern psychology teaches that joy is power, that right recreation is not merely wholesome, but developmental, and that like industry, recreation has become a matter of public concern.

Greek education was essentially a playground education, and the education most nearly approaching it today is that supplied by the playgrounds of America. The Greeks placed emphasis upon hygiene, exercise, games, and play. They cared for the strong and knew more about health; we, vastly more about disease. The Greeks had no patience with sickness, they seemed to look upon being sick as an offense.

Recreation is the most powerful agency in raising the subnormal to the ranks of the normal. The physical and mental life are so closely correlated that the type of the one cannot be disassociated from the type of the other in any individual.

Institutes and schools devoted to the training of atypical and backward children secure their most notable results in mental development by means of manual training, physical training, gardening and similar types of work. The effect of motor training upon mental development is receiving daily greater recognition. Many of these sub-mental children, either from lack of intelligence or lack of muscular powers, are disqualified from any active class work or games, and for these children no resort is left except medical gymnastics. Physiologically the brain has attained nearly its full size by the seventh or eighth year, but the physiological pathology of this type of child demands a brief preliminary consideration. Although the excito-motor centres in the spinal cord and brain are well developed at birth, the higher centres in the cortex

and the commissural fibres connecting the higher and lower centres are still very imperfect.

The material brain at this period of their life is practically destitute of a corresponding mind, and in so far from being the basis of a consciousness that is capable of associating recollections and developing ideas, it cannot even receive the permanent impressions that form memory. But the cells of this brain have a latent potentiality that is almost boundless. They are gradually incited into activity by the stimuli constantly received from the sense organs and muscles, and thus developing consciousness makes its first efforts at rational thought.

In cases of developmental retardation, due to inheritance, diseases or other causes, the brain cells do not react properly to the continued impressions and stimuli that reach them; they tend to remain in a rudimentary state. This fact has been confirmed by experiments on animals, in which section of the nerves supplying any area results in the corresponding brain centres remaining rudimentary. In a mentally deficient child the brain does not achieve its normal active development. The power of memory is deficient; the impressions of previous stimuli do not become sufficiently imprinted to facilitate the responses based upon previous experiences. Co-ordinated movements are carried out only with difficulty, as speech or walking may show obvious defects. Sensation also may be impaired, as is shown in the newly born child, which is very susceptible to forms of gentle stimuli of the skin, but in newly born idiots or mentally deficient children, no response, or at best, a feeble one, is obtained by similar stimulation. The muscular sense is diminished, the muscles being generally either in an atrophic or spastic state (or both) according to the respective conditions of the brain or spinal cord. Increase of muscular power goes hand in hand with progress of mental development or improvement in the sensory condition of the child. It has been proved experimentally and clinically that for properly carried out co-ordinated movements normal muscular sense is necessary; section or disease of the posterior roots produces ataxic symptoms, due to loss of muscular sense.

Imitation is a natural instinct in children and attempts at imitation of a given movement are one of the first steps towards attainment of co-ordination.

The chief objects in play and games in children sub-normal

mentally are to aid in developing efficiency of the motor, sensory and psychic elements of the cerebrospinal system, the muscular system and the sympathetic system, and to improve the constitution as a whole by stimulating circulation, respiration digestion, etc. The psychic effects of educational gymnastics upon healthy children apply also to the effect of carefully directed gymnastics upon mentally deficient children. Respiratory exercises play an important part in the treatment of mentally deficient children in the physiological as well as the pathological cases.

The close connection between physical and intellectual improvement is clearly demonstrated in the case of the mental defective. The result of systematic and well-conducted training of the body is a proper balance of the mind and body.

In some cases, quite apart from the cretin, the thyroid gland is not properly developed. Stimulation of the gland and also of the superior and inferior laryngeal nerves and cervical sympathetic can be employed to excite the gland to normal activity.

Modern education, stimulated by recent profound social changes, is experiencing a period of restlessness, discontent and experimentation. Several new types of school are being tried; one, the play school, correlates and gives a balanced relationship between physical education, moral education and cultural education. In the play school the teacher's interest is centered in the children and their activities and not merely in subjects of study. The play school unites the spontaneous play-life of the child with society's demands that he be instructed.

With the most perfect ventilation in the schoolroom there could not be the full aeration of blood in a child obtained on the playground. There must be the exhilaration of joyous exercise, the strengthened pulse, the quick and deepened breathing, the full chest and sustained effort that drives the air into the very apices of the lungs. Playground activities not only purify the blood but also stimulate healthful activity of all excretory organs, thus preserving a well balanced system.

The convergence towards a fusion of the school and play centre is seen, on the one hand, in the tendency of the school to organize the play-life of the child as is being done in Gary, Indiana, and on the other hand, in the tendency of the best year-round playgrounds to organize activities that are usually

considered school functions. The school has absorbed an increasing amount of the child's time but it does not supply what has been eliminated from child life by modern social changes.

The child's reflex mechanism does not merely respond to external stimuli but he is driven by internal needs and hungers that are fundamental springs of conduct. The child is a spontaneously active creature and develops his organic, nervous, emotional and intellectual powers in the process of gaining adjustment.

Another new type of school is the vacation school, which recognizes the fact that the child's education is going on every day in the year and the school replaces the home and community in supplying opportunity for experience. A prominent educator thus expresses himself:—"A generation ago, a boy had three months' schooling and nine months in which to get an education; now he has nine months schooling and three months in which to gain an education."

Then we also have the open air school which provides a fresh air school for the anemic and tubercular child, but the masses of children are kept indoors to be devitalized and subjected to a string of diseases with their train of adult weaknesses. At present, to obtain the best educational advantages a child must be blind, deaf, feeble-minded, incorrigible or truant. Then he is given exercise, playgrounds, gymnasiums, baths, fresh air in abundance, gardens and playshops. Normal children must get along the best they can without them. The widespread rebellion among parents against putting their children in public schools where they will be shut indoors has resulted in many private outdoor schools.

The campaign for school hygiene has become almost hysterical. Accumulating evidence has shown the physical, mental and moral effects of long hours, confinement and overpressure in mental work. Nevertheless, there is a demand for a broader manual training, a larger nature-study, a fuller "physical education" and an efficient moral education—all interpreted as "subjects of study" and added to the old subjects. The real business of the child is not to pass examinations but to grow up, his real life is lived on the playground, not in the schoolroom.

Athletics are a phase of play for the adolescent stage, at which age play is more intense, and vigorous. Competitive

play in adolescence is nature's instinctive method of completing the development of the fundamental powers upon which the individual depends for constitutional, strong expression and social adjustment and service.

The athletic field of the late adolescent years is as truly a laboratory of conduct as is the playground of the child. Fourteen to twenty years is the critical period in which all the larger fundamental social character traits and moral habits are formed and they are formed in a large measure on the play side of life.

Athletic games have long been regarded as a moral prophylactic for boys, but it is only recently that they have been recognized as serving a similar purpose in girls. In the girl's general development the playground is a school for initiative, self-control and organization. The genuine life-giving exercise and the invigorating air of the playground develop their bubbling and exuberant spirits and give opportunity for self-expression.

The time has come when men are beginning to realize that the stifling of the child's developing enthusiasms in life through a back-warping, chest-cramping, nerve-breaking, mind-deadening desk and schoolroom program of studies is cruel, and a reinterpretation and reorganization of his school work is demanded.

In every city there should be a psychological clinic connected, if possible, with the city hospital and controlled by the board of education. This clinic should determine scientifically the degree of mental dullness of subnormal children. Full clinical records of the patients should be kept and these patients should be assigned to a particular school or institution where they may be observed under controlled conditions.

Educational organization is focused on the movement for directed play and leisure, as is now being demonstrated in the Boy Scouts and Camp Fire Girls, in which there is a program of activities and hours of achievements as a means of character development. Vocational training and guidance are receiving special attention as well as the avocational or recreation adjustment, which depends upon the educational adjustment during the years of growth.

Education is now the dominant science, the source of appeal in all social effort, as well as in the efficient adjustment of the individual. Of the three forces determining what any

individual shall be at maturity—heredity, activity, and environment, with the three corresponding sciences,—eugenics, education, and social economy—activity alone is the source of power in the individual after birth. The environment sets conditions for activity, therefore influences results; but activity itself is the developer of all power, and education the science of constructive effort with the individual. Education has become the new inspiration in Human Engineering.

Even the universities feel the new responsibility of education, and schools of education are arising, still dominated by the old narrow ideas of education as an intellectual process, but destined to fulfill their real function,—producing engineers of child life and child adjustment to meet the requirements of an advancing civilization. It is not enough to know the psychology of the child; one must know the child's psychology. Education must tell us not only how to get the most out of the working hours, but also how to spend most profitably and joyously the hours that remain.

Summarizing, we see that play is an essential part of every well-balanced system of physical education, and that its value is threefold, physical, mental and moral. From an educational standpoint, play's greatest value lies in the fact that, if rightly conducted, it awakens and strengthens the high moral qualities of fairness, courage, determination, steadfastness and presence of mind. Play gives energy, decision and promptness to the will. Plays and games teach obedience and subordination of self for the benefit of the group. In short, by training not only the physical and mental, but also the moral powers, they are of very great service in cultivating the civic virtues which are necessary for the life and welfare of the individual and of the community.

VOICE SIGN IN CHOREA.—Continuing his study of the voice changes in chorea, W. B. Swift (*Amer. Jour. Dis. Child.*, 1914, viii, 279) finds in twenty cases of chorea, with over 500 observations on the voice, a change of pitch and intensity in two cases out of three. These choreic voice changes are more frequent in the vowels, less so in whisper, whistle, consonants, air blow and holding of breath; and are less and less in frequency in this order. Other less frequent and less marked changes occur that seem of interest subordinate to those in the vowels. The most marked change occurred in the open prolonged sound of "a" as in "are," and therefore this is offered as the routine clinical test and method for the elicitation of the choreic voice sign.—*Am. Jour. of Obs. and Diseases of Women and Children*, March, 1915.

USE OF THE REPERTORY.

BY

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(Read before the North Pennsylvania Homœopathic Medical Society).

MR. PRESIDENT: A story is told of a man walking along a cross-country road soon after a spring thaw. Seeing a hat lying in the middle of the roadway, he set about to find some means to rescue it from its apparent muddy grave. Getting a number of rails from a post-fence nearby he laid them carefully out into the road and, walking along them until he came to their end, he reached out with his cane and deftly landed the hat on the bank. However, on looking back where the hat had been, he was more than surprised to see the head of a man. He was surprised, but finally managed to call out, "Why, my dear sir, you don't mean to tell me that the mud is that deep?" The fellow in the mud replied, "This deep? Why man alive, I'm standing on a load of hay." In using the repertory, in our endeavor to find the perfectly indicated remedy, we sometimes feel that we are still a little deeper in the mire than the man with his hay. But why?

The reasons may be many, but the *chief of all* we may mark down as being our own fault. We have not taken the case properly. We have not marshalled our symptoms and we have not been methodical in the use of the book which is the key to the situation.

Dr. Kent, probably the best prescriber in our land today, and probably the best informed and most able user of the repertory, says, in speaking of the use of it, that "There are many methods; no two men work alike with the same repertory. Every individual will work the repertory in accordance with his ability, in accordance with his mentality, in accordance with his tendencies, and his work done will show his personality."

To those knowing nothing of the repertory and its proper application, it is all madness. To those knowing a little, it is a maze. But there is method in our madness and the maze disappears before the bright rays of intelligence when used or

applied methodically. In using the repertory we are reminded of the terse verse of the poet:

“A little learning is a dangerous thing;
Drink deep, or taste not, the Pierian spring:
For shallow draughts intoxicate the brain,
While drinking largely, sobers us again.”

In other words, “*the know how*” is necessary just as the know how is so essential to success in any line of endeavor. Luck does not count. We claim not to know the words luck or lucky. For:

“Luck, comrades, luck, is only pluck
And doing things over and over;
Courage and Will, Perseverance and Skill
Are the leaves of our Good-Luck clover.”

A blind pig will once in awhile find an acorn, but while he is so doing the wide awake pig with two eyes on the alert will find many. So we may stumble upon the correct remedy once in awhile with indifferent application, but what could we not do if thorough application were made at all times. We possibly get discouraged too soon. We possibly say “Oh, what’s the use,” or probably when things just won’t go right, say, “Oh, well, it can’t be done.” It might then be well to remember the trite saying which affirms that “Just as soon as the sages have finally determined that under no circumstance can a certain thing be done, watch some keen-eyed youngster come along and do it.”

In the first place the repertory is not a dictionary. We can not just open it from A to Z and pick out with ease the thing that is sought. But it is a key and it will unfold untold treasures if applied in the manner that the situation demands. It is a volume of symptoms and it does, or should contain, all the known symptoms and conditions of the homœopathic remedy or remedies.

The use of the repertory pre-supposes that the case has been properly taken and the symptoms arrayed in a systematic manner; a method will follow later.

Many of the symptoms after the case has been taken, will at once appear to be common, of small import, while others

will at once seem striking or uncommon or peculiar. A great mass of common symptoms will at their best present only a wide group of remedies while a single peculiar symptom will greatly reduce this number of remedies even to two or three sometimes and thus greatly reduce the complexity of the case and the time in seeking the remedy needed. For example: The symptom "*dryness of the throat*" is a common symptom and we find it under 170 remedies. What a task to single out a remedy. On the other hand suppose we had at the same time with this dryness a *sensation as if a hair were hanging in the throat*. Here we find but six remedies having this symptom and of these six two stand out more prominently than the others, viz: sulphur and kali bich. The probability is that one of these two is the remedy although other symptoms present might throw the burden of the evidence in favor of any one of the other four, viz.: ars., carb-s., coc-c., or sil.

An outline of symptoms in their order of importance may be expressed by the following plan remembering that the mental symptoms take precedence over all others and that the order of importance runs from within out, or from the mind to the skin; and also from above down or from brain to extremities, and at the same time, from generals to particulars.

1. *Mental Symptoms*: Highest value—3 groups.
 1. Will.—Manifesting perversions of loves and fears. These are oft kept from the physician.
 2. Understanding or Intellect.—Perversions, as illusions, delusions, delirium, hallucinations.
 3. Memory.—Perversions. Lowest value.
2. *Physical Generals*: Manifesting physical loves and sensations of body as a whole.
 1. Perversion of Sexual Sphere.—The Genitals. Excesses or decrease of function or any perversions.
 2. Appetite.—The Stomach. Desires or aversions to food, drink, etc.
3. *Weather and Climatic Influences*: Temperature extremes or effects of heat and cold.
4. *Hemorrhages and Discharges from the Body*.
5. *Particulars*.
 1. Head.
 2. Chest.
 3. Extremities.

Quoting from Kent we find the following: "As is well known to older practitioners, the method of working out a case from generals to particulars is the most satisfactory. If a case is worked out merely from particulars, it is more than probable that the remedy will not be seen, and frequent failure will be the result. This is due to the fact that the *particular* directions in which the remedies in the general rubric tend have not yet been observed, and thus to depend upon a small group of remedies relating to some particular symptom is to shut out other remedies which may have that symptom, although yet not observed." It may not be *impossible* to work out many cases from generals but the labor is so much greater. Boenninghausen deals almost wholly with generals in his repertory and to me it seems to be a burdensome volume in attempting to try to find the remedy. We very seldom look at it now.

Repertories, generally speaking, use several grade of type in ranking symptoms. Very heavy type denoting more value than the italic; the italic, in turn, denoting more value than the common or ordinary. In reckoning value, we accordingly allow a value of 1 for the common wherever found, 2 for the italic, and 3 for the heavy type. Summing up our values we will practically discover our remedy. Sometimes several remedies will sum up to practically the same value. Then our guide to importance of symptoms mentioned above may decide the remedy, remembering that the mental symptoms rank first and then these in turn rank in order, as Will, Understanding and Memory. In all cases of doubt recourse to the *Materia Medica* is probably the last court of appeals and a careful study of all the symptoms, as found under the two or more remedies in the balance, will generally throw the weight to one of those being considered. If still the case is not clear, retake the symptoms and see if some important mental symptom, or some other important symptom cannot be discovered.

Sometimes we are not able to find a certain symptom in the repertory as we seek it. If so, oft-times we may find it under a cognate name or synonym. For example: Assuming that a certain symptom as given us, is *aggravated from motion*. Assuming that on looking up this particular condition we could not find it as such. Then probably if we turn to the same symptom we might be able to find that it is *ameliorated from rest*. The two are identical.

The very best application with reference to repertory study

will at times be fruitless, for incurable cases exist and as such will of course not be cured. A great many of these incurable cases, however, will be benefited.

Our chronic cases, we must remember, are seldom cured with a single remedy. But, having selected the similimum, we will find if we have selected well, the prominent symptoms will disappear or be modified so that a new array of symptoms will present themselves and another remedy will or must be sought to aid or complete the cure.

The habitual use of the repertory makes each succeeding use of it much easier and more lucid. By marking and making cross references we will be able to acquire the habit of using it more thoroughly, more frequently and more efficiently. By using it "over and over" it will cause our Good-Luck clover not only to grow, but to blossom and bear fruit as well. "Perseverance" will foster "Skill" and these two linking arms and traveling along the medical highway together will so engender our "Courage and Will" that we will feel fortified in our endeavors and feel more enthusiastic in our efforts to apply the Law of Similars.

NITROUS OXIDE OXYGEN ANÆSTHESIA.

BY

JAMES M. GODFREY, M.D., PHILADELPHIA.

(Read before the Homœopathic Medical Society of the County of Philadelphia).

THE administration of Nitrous Oxide Gas alone for minor operations, dental operations, or those in which the infliction of pain is but momentary, is highly successful and really calls for but a small degree of cleverness on the part of the administrator. In from one-half to two minutes after the beginning of its administration, the patient is anæsthetized to a satisfactory degree for a short operation. To force the pure gas further results in a deeper sleep and an anæsthesia whose period depends directly on the length of time taken by the blood to free itself of the Nitrous Oxide. To quote Hewitt: "The blood has the absorptive power of 45 volumes of Nitrous Oxide Gas to each 100 volumes of itself."

Various phenomena occur during the administration of the pure gas, which unsuit it for use in general surgery, namely: jactitation, tonic or clonic muscular spasms, which in some cases take on the character of a widely diffused epileptic seizure; the patient may even pass into a state of opisthotonos. The reflexes, both deep and superficial, are slow to disappear, and abdominal rigidity is practically constant. Cyanosis is developed to a marked degree. The first experiments carried on with a view of counteracting this result of asphyxia, or anoxemia, were directed toward the mixture of Nitrous Oxide Gas and air; and these experiments failed because when the Nitrous Oxide was diluted with air to such an extent that convulsive seizures were abolished and Cyanosis decreased, the Nitrous Oxide was not present in quantity enough to induce satisfactory anæsthesia. In brief, 40 per cent. of air and 60 per cent. of Nitrous Oxide would contain about 8 per cent. of Oxygen and 32 per cent. of Nitrogen, and while the 8 per cent. of Oxygen is amply sufficient for the purpose, the 60 per cent. of Nitrous Oxide is not sufficient for surgical anæsthesia—at least 92 per cent. must be present. Oxygen was later substituted for air with the result that definite proportions of Nitrous Oxide in from 92 to 96 per cent. and from 8 to 4 per cent. of Oxygen were used, convulsive seizures were abolished and the marked Cyanosis was decreased until under the proper mixture the features took on a slightly ashen hue.

While, as I have stated, the administration of Nitrous Oxide alone calls for but a small degree of cleverness, the administration of Nitrous Oxide and Oxygen in proper quantity for the case at hand becomes an accomplishment, the results of which are apt to differ widely with different administrators. No two cases, of course, are the same, or demand the same mixture, and a lividity that one administrator may be satisfied with may not satisfy one more skilled. I have been present at demonstrations of Nitrous Oxide in major operative work when Cyanosis was present to an alarming degree, at least to one used to ether anæsthesia. In spite of the statement made by each demonstrator that such deep Cyanosis was necessary to prolonged Nitrous Oxide anæsthesia, I am inclined to doubt it, remembering with pleasure my visit to the clinic of Crile at the Lakeside Hospital in Cleveland where this combination was given by his anæsthetist to over a dozen cases during my stay, and in every case with but the slightest suggestion of

lividity. It is my opinion that such results are only reached when the administrator is thoroughly acquainted with the apparatus at hand and perfects himself in the administration of but one anæsthetic, or combination, to the absolute exclusion of all others. Morphia gr. $\frac{1}{4}$ and Atropine gr. $\frac{1}{120}$ by hypodermic, one hour before operation is the invariable rule unless the patient is already in a drowsy or torpid state. Children may be given Morphia gr. $\frac{1}{12}$ and Atropine gr. $\frac{1}{200}$. No child under 5 years of age should be kept under this, or any other anæsthetic, for more than one hour. In Nitrous Oxide children under 4 years of age have difficulty in breathing against the valves of the apparatus.

Anemias, of course, contraindicate Nitrous Oxide. Status Lymphaticus here as well as any other anæsthetic.

The obese take it poorly and in the same class are the athletic, who are poor subjects at any time when anæsthesia is to be considered. It is advised by Heidbrink that alcoholics be given from one to two ounces of whisky in eight ounces of Saline per rectum, as a preliminary. Drug habitues to have an average dose of the drug addicted to. While Nitrous Oxide has its contraindications, as other anæsthetics must, and do have, it is particularly adaptable in the aged and in those cases where trouble from the kidney is to be feared. It is eliminated rapidly and entirely by the lungs—a 20 per cent. saturation of the blood will fall to 6.9 per cent. within a period of two minutes after cessation of the anæsthetic. While it is admitted that a rise in blood pressure takes place under Nitrous Oxide alone, we have the assurance of Kemp, Buxton, Guy, Goodall and Reid that the rise under the Nitrous Oxide-Oxygen combination is hardly demonstrable.

Small amounts of ether vapor may be administered from time to time, as occasion demands, for relaxation without the usual after effects of the ether being apparent. When ether vapor has been combined in moderate amounts, recovery usually takes place in from three to six minutes. Residual Oxygen in the lungs is apt to delay anæsthesia in the beginning and it is well to postpone the start of operation several minutes after anæsthesia is apparently complete, to allow absorption, or better still—saturation. However, it is not my intention to take up your time with the technique of administration, as Dr. Heidbrink has kindly consented to give a dem-

onstration of his apparatus in the clinic at the close of this meeting, while Dr. Northrop performs a laparotomy.

To close, I might add that the one drawback in Nitrous Oxide and Oxygen as an anæsthetic, is its initial cost. The large cylinders of 1250 gallon capacity brings the cost to approximately \$3 per hour, the small portable cylinders to \$4 per hour. The installation of a plant for the manufacture of the gas will cut the cost 25 to 33 per cent.

CARCINOMA OF THE STOMACH.

BY

H. DELLMARR CONLEY, M.D., PHILADELPHIA.

THE time has now come when gastric cancer is no longer an incurable disease. The early diagnosis is very important, as the disease in its beginning is no longer a medical question but purely a surgical entity. After the disease has progressed to such an extent that surgery is not to be used, it reverts to the question of palliation and prolonging of the patient's life as long as possible with the means at our command. That the finding of a mass in the epigastrium at, or near, the pylorus is no longer helpless, has been proven by Mayo, Mayo-Robson and Monyihan. The growths have been removed by pylor-ectomy, excision and by partial gastrectomy and patients have lived for years afterward in comfort. Even when the case has gone on for a long time and a large tumorous mass has developed, sometimes a gastro-enterostomy will make these patients comfortable for a long time, because some authors think that there regurgitates from the jejunum some antiseptic or antibody which in a mild degree mitigates against the development and onward progress of the disease. Operation should not be undertaken with supra-clavicular and rectal metastases. I will not discuss prognosis or treatment.

The stomach is more frequently affected with cancer than any other organ of the body—35-45 per cent. The frequency of gastric cancer is steadily increasing and statistics from 1850 to 1913 show the deaths per 100,000 to be: 1850, 9; 1860, 11.7; 1870, 16; 1880, 26; 1890, 33.5; 1900, 63; 1913, 78.9; it is probable that the death rate today is higher mainly

because of more correct diagnoses being made rather than that the disease is increasing in frequency. Cancer is a disease of late middle life, the highest average deaths in 600 cases collected by Britton were at 50 years. The percentage in decades of life are as follows: Age 10-20, .08; 20-30, 1.5; 30-40, 8.8; 40-50, 18; 50-60, 28; 60-70, 28; 70-80, 14; over 80, 2. It will, therefore, be seen that the maximum liability lies between the ages of 40 and 70.

ETIOLOGY.

Little of settled value is known on this point. Numerous theories have been advanced. The basic fact requiring explanation is the presence in affected tissues of cells which have capabilities of growth and migration through tissue structure. Direct causes for cancer have been sought. Of these, irritation and trauma appear to be factors. Irritation does seem to be a causative factor in the production of epithelioma, following ulcers and old scars. Direct trauma, as from a blow in the gastric region, rarely causes malignant disease. Small traumas taking place in the stomach from substances which are improper in nature for food such as indigestible and hard substances and congestions due to long standing irritative conditions, such as those in excessive or other abnormal gastric secretions, may give rise to the trauma and irritation theories. There is also a theory advanced of a parasitic origin of the neoplasm, based on the view that the inoculation of some parasite excites the cell proliferation. Other theories of the origin of carcinomata are well known to all of you, and I will not mention those. As to the process locally, the most plausible surmise is that the physiological resistance of connective tissue is reduced or impaired, until the epithelium having ordinarily only a normal tendency to grow, can invade it causing irritation with lowered resistance and that then unusually rapid cell multiplication results from the increased nutritive supply.

Pathologic Anatomy. There are 4 clinical types of gastric carcinoma:

The cylindric cell, or adeno-carcinoma; 2, soft glandular, or medullary carcinoma; 3, hard glandular or scirrhus; 4, the mucous or colloid carcinoma.

The *adeno-carcinoma* presents a soft distinct prominence

upon the surface of which smaller fungoid elevations develop, being attached to the fundamental tumor by narrow or broad bases, giving the surface a papillary appearance. The tumor is red in color and is very vascular. Most frequently found in the pyloric region, close to the valve and sharply limited toward the duodenum. This variety originates from the pyloric glands, while at other locations in the stomach, the surface epithelium and cylindrical cells of the gland vestibules form the bases of origin.

The *medullary carcinoma* forms knotty projections on the inner surface of the stomach, form is characteristic. It presents a navel like deepened center and an external surrounding wall formed by the mass of the tumor—it is broad or narrow, high or low: at times exhibits a uniform appearance or it may be irregularly ragged in outline. In the center, the tumor mass breaks down into fragments, or at times, this depression may be found smooth, since the more resistant muscularis may have been exposed and is presumably destroyed much more slowly than the outer layers by action of the gastric juice. Occurs in any part of the stomach.

The *scirrhus* is distinguished from the two previous mainly by its hardness. It produces no large tumor nodes, but rather simple thickenings of the entire wall. The surface of the mucosa shows a flat ulceration, which has either a smooth or an actually cicatricial basis, or else a papillomatous, irregular and corroded appearance. The edges are flat without a trace of wall-like elevation and for this reason the transition into the surrounding mucosa is gradual. This variety occurs almost exclusively at the pylorus and explains the stenosis found there. The adjoining gastric mucosa becomes hardened and inelastic, preventing the pyloric opening from closing properly, resulting in incontinence through the narrowed orifice.

The *colloid*. This variety does not produce circumscribed tumor masses, so much as a diffuse thickening of the entire wall. In this growth the stroma is gelatinous, translucent, colorless, or light brown material. These tumor masses are recognizable on the inner surface and presents an extended flat ulceration. The colloid masses are enclosed in a distinct grayish alveolar framework. The whole mass has a slimy mucoid feeling, but not nearly as soft as genuine mucus. The favorite location is in the pyloric region, whence they extend to the

duodenum and also to the liver by direct continuity or via adhesions. This variety can also extend to the esophagus from the cardia. Perforation rarely results.

STRUCTURAL EFFECTS OF MALIGNANT GASTRIC NEOPLASMS.

Cancer is accompanied by adhesions of the serosa to the pancreas, liver, transverse colon, anterior abdominal wall and omentum and at the same time there occurs a callous hyperplasia of all connective tissue in the immediate neighborhood. The result is that the stomach becomes fixed, especially at the pylorus, as it is most frequently affected. The stomach may be dislocated downward by tumor masses, in which the pylorus may extend as far down as the symphysis pubis. Frequently the stomach exhibits change of size and form. We may have diminutions in size accompanying total degenerations of stenosing cardiac carcinomata, or more commonly, dilatation accompanied by marked muscular hypertrophy, originating from obstruction of the passage through the pylorus—a stenosis existing there. The frequency of cancer is as follows: pylorus, 60 per cent.; lesser curvature, 20 per cent.; greater curvature, 10 per cent.; cardiac orifice, 10 per cent.

Secondary cancerous growths take place by direct extension, by continuity of tissue, by way of adhesions or by metastases. The latter are found most commonly in the lymphatic glands, routes of lymph vessels, in the liver, peritoneum, omentum, intestines, including the rectum, gall bladder and even in the pleura or lungs. Metastases also occur in the left supra-clavicular nodes. The liver is involved in $\frac{1}{3}$ of all cases. Metastases are more common in the medullary and colloid cancers than the scirrhus form. Metastases in cancer occur by way of lymph and blood currents, but mostly by the lymph vessels. Numerous miliary metastases may be found in the pleura and peritoneum, closely simulating the finely scattered tubercles of T. B.

ONSET OF GASTRIC CANCER.

It arises from a precancerous history, the patient giving a history of undisputed clinical gastric ulcer for months or years.

2. Where possible in the course of 6 weeks the patient develops and shows all of the typical signs of cancer. The

time preceding this may have been absolutely free of any gastric discomfort.

3. Another class is where the patient shows clinical evidence of gastric ulcer for a short time, but which suddenly and progressively takes a fatal downward course, and a cancer is found at operation or autopsy.

As a primary cancer, Osler and McCrae give: A form of gastric malfunction of a downwardly progressive nature, occurring between 40 and 70, where stomachs were normal or with ulcer history. The imperfect function is shown by abdominal distress or pain, associated with cachexia, loss of blood, epigastric tumor, vomit, gastric contents revealing motor defects, low free Hcl, presence of organic acids and foreign micro-organisms.

As a precancerous history, Dr. Eberhard's syndrome is: a form of gastric disorder between 30 and 70, characterized by symptoms of gastric or pyloric ulcer, viz.: pain 1-3 hours after meals, belching of gas and risings, periodicity, cycle, and a possible defective gastric motility. In the beginning a hyperchlorhydria, relieved by food or alkalis. Vomit soon ensues, relieving the symptoms temporarily, and there is a transitory occult blood in the gastric filtrate. As ulcer progresses toward malignancy, we have the reduction in acids and ferments with a loss of food relief and possible food aggravation, absence of periodicity and cycle, an increase in occult blood in gastric filtrate—marked deficient motility and finally a small mass at or near the pylorus.

SEPARATE SYMPTOMS AND DIAGNOSIS.

Anorexia. Appetite is frequently diminished early and thirst is increased. In this aversion for meats and proteids (eggs) is characteristic, but not always present, for often when this aversion is present, there is no desire for solid foods. The anorexia is often profound and accumulating for all foods except those of a fluid nature. An excessive thirst is common when pyloric stenosis exists.

Eructation. This is a late symptom due to gas formation from gastric stagnation and fermentation. In scirrhus cases, gases are odorless till late: in medullary and colloid apt to have a very bad taste and smell early in the case. This may be caused by decomposition of the neoplasm, and of course,

when stagnation exists, from excess of organic acids and putrefaction present in the organ.

Pain, pressure and distress. In the beginning, pressure and distress after eating may exist. In the course of time, actual pain ensues in addition to this, pains which not only follow the taking of meals, but which are more or less constant. The pain is rather a constant feature and may be in the gastric region, right hypochondrium, sternal, low in the abdomen or back. In cardiac affections, pain is often in the thorax or shoulder. Pain is lancinating, burning, gnawing, drawing, dull or sharp, and unlike ulcer pain in its ameliorations—not relieved by taking food, usually worse, no relief from alkalis, and not the definite periodicity of the ulcer pain. It begins early and intensifies to the exclusion of all other subjective symptoms. Whether the stomach is empty, after vomiting or full of food, it is uniformly present. When ulceration or perigastric inflammation exists, it is severe.

Vomiting. A frequent but by no means a constant symptom. Rarely present early. Here nausea and a slight regurgitation of bad tasting sour fluid is complained of. In the pyloric involvement vomiting is constantly present and is then due more to the stenosis causing obstruction to the exit of food and excessive accumulation and fermentation than to the mere presence of the cancer itself. The vomiting is of the collective type containing undigested foods, which were swallowed 1 or 2 days before, with a large quantity of offensive fluid, in which are found numerous micro-organisms, yeast cells, organic acids, mucus and sometimes changed blood and tumor fragments. Vomiting is found most frequently when the orifices are involved, less frequently present when the curvatures, posterior wall or body of the stomach are affected. May be independent of the taking of food or occurs right after food ingestion. In late cases the vomitus is mixed with blood and assumes the well known "coffee-grounds" appearance. Earlier in the disease, vomiting gives temporary relief, and may be slightly acid due to organic acids.

Hemorrhage. Vomit of blood occurs in 50 per cent. of the cases, due to transudation from a soft growth or bleeding from an eroding ulcer on the surface of the neoplasm. Blood may be ejected clear and in large or small quantities. It is usually mixed with gastric contents, altered in color and may be occult.

Quite constant when once established. Melena not as common as in ulcer.

Constipation. Bowel movements are variable, although constipation is the rule. May alternate with a diarrhœa caused by the catarrhal state of the intestinal mucosa, due to decomposed foods from the stomach.

Fever. Fever may be due to an intercurrent affection, accompanying a resulting phlebitis peritonitis or pulmonary complications, although there are cases of gastric cancer accompanied by prolonged fever due to absorption from the ulcerated surfaces, effect in heat centers by carcinoma toxins or to actual inflammation about the neoplasm. Fever is usually observed late and is continuous or intermittent.

Condition of the Blood. A decrease in the red cells and hemoglobin is common. The count may be reduced to 1,500,000 cells and hemoglobin to 50 per cent., rarely falling as low as the red cell count of pernicious anemia. May have a mild leucocytosis up to 15,000, rarely more. Late in the condition the usual leucocytosis found during digestion is absent. With ulceration or reactive inflammation, a higher leucocytosis may be found. Pernicious anemia and gastric cancer may be confounded, but in pernicious anemia there is no interference with motility, no occult blood and cancer tests are negative.

Condition of the Urine. Urine is usually diminished in quantity and concentrated because of deficient ingestion, vomiting and long retention of food in the stomach. Chlorides may be diminished and the excretion of Nitrogen increased beyond food values. A peptonuria may be observed. Urines rich in indican are common, especially when peritoneal carcinoma or stenosis is present.

Cachexia. Cancer always leads to cachexia, most pronounced when emaciation is well advanced. Begins as a faint lemon-yellowish tint, darkening into a beeswax color late. The color must not be confounded with those of hepatogenous jaundice, Addison's disease, and cirrhosis of the liver, amyloid degenerations, etc. Loss of weight is associated and weakness is marked.

Tumor. Tumor in the gastric region added to other important symptoms is usually confirmatory of cancer. Tumors of the cardia, lesser curvatures and posterior wall are rarely felt unless large, because of their position. Those of the pylorus,

anterior wall and greater curvature are readily felt when of sufficient size. Inspection alone in an emaciated subject will disclose its presence. To palpation a hard nodulated body of various size and shapes is felt, although it may be soft, small and smooth. The mass is uninfluenced by respiration unless adhesions to the liver exist, although on deep inspiration, tumors of pylorus or those of the curvature without adhesions may descend slightly. The growth is usually high in the abdomen, near the rib borders, in the median line. From its weight it may drag the pylorus downward to the level of or below the umbilicus. Tumor usually palpable after the third month of the disease and best palpated by relaxing the abdominal wall and diverting the attention of the patient. Inflation of the stomach may be resorted to. Important points in the X-ray examination are the bismuth residue after six hours, peristaltic wave jumps in lesser curvature, marked defects in stomach shadow at the lesser curvature, pylorus, shortening and retraction upward of the stomach, and the manifestation of bismuth directly outside of the line of the lesser or greater curvatures.

Most important and valuable is the interference with motility. A stomach is only of value as long as its motility is good. May have no Hcl, pepsin, rennin, etc., yet if the motility is good, few symptoms develop. Motor tests can be made with test meals, syphoning the stomach from 6 to 12 hours later. A normal stomach should be empty in 6 hours—and if food is found retained hour by hour over that time, the degree of defective motility is more pronounced.

DEFINITE SYMPTOMS PRODUCED BY LOCATION OF THE TUMOR.

Cardiac end. Dysphagia is common, due to the obstruction of the orifice. At first, the difficulty exists in swallowing solid foods. This is associated with fullness and distress in the lower sternal region, which continues till food has passed through the cardia. The stenosis progresses until only fluid foods are swallowed. Later the stenosis is complete, the food collects in the esophagus, and after straining and retching, the patient regurgitates the food often containing mucus and blood. The stomach at the late stage is smaller than normal. The diagnosis is suggested by the dysphagia and obstruction offered to the passage of food, stomach tube or bougie. The

X-ray is also valuable in the diagnosis of tumors of the cardia. A sign of some value is the delay of over 10 seconds of the cardia squirting sound following deglutition, which is heard normally at the cardia in 7 seconds.

Pylorus. Three-fifths of all gastric cancers occur here and are most readily palpable in this locality. The vomitus consists of large quantities of material and food eaten 1 or 2 days previous, as described before. This is due to obstruction of the exit of food, and its accumulation in the stomach. Stagnation of foods is a common symptom due to obstruction, muscle paresis accompanying an atrophy, and absence of the hydrochloric acid-enzymotic function. The stomach is usually much enlarged and visible peristaltic movements of the stomach are important symptoms. In other cases, the organ is small and X-ray shows the lesser curvature and upper wall of the duodenum encroached upon by the growth. These show a limitation of peristaltic waves to the fundus and greater curvature, and their complete absence in the pyloric end.

Stomach walls. In growths in the stomach proper, the lesser curvature is most commonly affected. The greater curvature, posterior and anterior walls are also affected. As the growth encroaches on the orifices, the clinical picture changes. In tumors of the posterior wall, it may not be evident from without. Evident tumors are liable to be to the left of the median line and the stomach may be found to be contracted because of diffuse infiltration: in these instances the chamber is small and its contents little. In practically all of the wall affections, food stagnation is present but the food is liable to be in finer particles, than in those of the pylorus. When the stomach is extensively involved, the term "leather-bottle" stomach has been applied. The esophagus and duodenum are sometimes involved in diffuse forms. Tumors of the lesser curvature are not palpable unless the stomach is low down or the tumor is large, while those of the anterior wall and greater curvature are evident early.

GASTRIC ANALYSIS.

Hydrochloric acid. The diagnosis of cancer is made with the fore-going symptoms and findings and examination of the gastric contents, along with the motility, and the chemical, bacteriological and pathological findings. Tests for gastric chemistry are valuable but must be considered relatively.

Alteration of Hcl in amount is helpful. Formerly the complete absence of free Hcl was considered important. It is now known that 44 per cent. of proven cancers had free Hcl—the average being between 16 and 20. In ulcer, it is between 50 and 60. Great importance is placed in ulcer where the acid has been high and gradually or suddenly falls lower and lower. Hcl is found present early, diminishing as the disease progresses, and may be absent late in the disease. While the absence of Hcl is not indicative of cancer (atrophic gastritis and anachlorhydria), in patients of middle life presenting other signs of malignancy, it is a valuable symptom. With the loss of acid, the pro-enzyme is also found wanting.

Organic acids. More important than the Hcl findings, is the presence in the stomach of abnormal amounts of lactic acid. The formation is due to fermentation, brought about by the absence of Hcl, food stagnation, influence of lactic acid bacilli on gastric contents, and the diminution of gastric enzyme. While lactic acid is present in 90 per cent. of gastric cancers, it is present in a few other non-malignant affections of the pylorus (cicatricial contractions, perigastric adhesions, hypertrophic stenosis, chronic ulcer of the aged, where obstruction and fermentation have permitted organic acid formation.) It may be present under relative conditions of marked atonia and absence of gastric secretions. Its absence does not exclude cancer. Lactic acid is never present in amount in the normal stomach. True it generates after meats, fish and milk are taken, but the amount is small. In making the test you must be sure no food has been taken to cause the acid. Knorr's oatmeal is free of lactic acid forming qualities and should be used as a test meal, after a thorough washing of the stomach. If positive, it is strongly suggestive of cancer.

Tumor particles and organic findings. The one pathognomonic symptom of gastric cancer (except viewing it at operation), is the finding of particles of the tumor in the vomitus or contents and recognized microscopically. These should be sought for in all suspicious cases. Generally obtained late. Blood and pus, however, are commonly present in cancer and are important and valuable findings. Pus is never present in a normal stomach. Early cancer, shows the pus cells massed most often as if from a slough. Blood is especially important when constantly found. It is found in the feces in 53 per cent. of the cases. Microscopic examination

of stagnant gastric contents reveal food particles, especially meats. Stagnation and pyloric obstruction are revealed by the following: Give a meal of 25 small seedless currants. In 12 hours, wash the stomach and if any are found, there is undisputed evidence of gross error of motility. It is wise to repeat this test, because acute ulcer at times produces pylorospasm and retention of currants.

Yeasts and molds are generally in the stagnant contents, while staphylococci, streptococci and diplococci are common. Occult blood is present in 75 per cent. of the cases—and when found it is usually present in test after test, in contradistinction to that of ulcer which is transitory.

A frequent constituent of the microscopic picture of gastric contents is the presence of large numbers of large sized non-motile organisms,—the Boas Oppler bacilli. They are long rod shaped organisms, found in running formations, or they may be seen detached from one another and lying in all directions like small sticks or may join each other in zig-zag order. They are about 6-8 microns long and 1 micron thick. They are anaerobic and do not form spores. They can coagulate milk and generate lactic acid from sugar. Stain readily with aniline stains. Lactic acid bacilli are present when lactic acid is found. The Boas-Oppler bacilli are found especially when obstruction is pronounced. Because cancer has obstruction as an initial change, it is not unusual to find them early, even before the tumor is palpable. In 80 early cases of Dr. Eberhard's, the organisms were present in 60 cases, or 75 per cent.

X-ray shows irregularity of the stomach outline in localized areas usually at the pylorus and lesser curvature. There is the appearance of what looks like empty spaces or defects in the current of the mass in the stomach, two appearances of abnormal boundaries of the stomach mass, three irregularities of peristalsis.

Cancer Tests. In a previous paper read before the class by Dr. Gray, the various stomach tests were adequately explained and I may add that Solomon's, Oppenheimer's and the Glycyl-tryptophan tests have their relative values. The most valuable test is the Wolf-Junghans. The basis for this is the finding of excess quantity of dissolved albumins in the gastric contents. In a normal stomach, the proportion ranges between 10 and 50 units. In stomachs with malignant growths, the proportion is higher ranging from 10 and 400. The reagent

used consists of Phosphotungstic acid 3 ccs, Con. Hcl 10 ccs, alcohol 200 ccs, and water q.s. to make 2000 ccs. A series of 6 tubes are taken, and in each tube the following amounts of filtered gastric juice are placed: 1st tube, 1 cc; 2d tube, .5 cc; 3d tube, .25 cc; 4th tube, .1 cc; 5th tube, .05 cc; 6th tube, .025 cc; giving the dilutions of 1:10, 1:20, 1:40, 1:100, 1:200, and 1:400, respectively. Water is then added to make 10 ccs in each tube and the reagent is poured on the top, a white ring developing, as in the nitric acid test for albumin. The test is negative if found in tubes 1, 2 and 3 and not in 4, 5 and 6, but if found in all 6 tubes, the test is positive, but if in 4 tubes, doubtful. Best results are obtained in this test when the cancer is at the pylorus or curvatures. This test was positive in 78 per cent. of Dr. Eberhard's cases. Blood may confuse a positive reaction.

Early diagnosis. Surgery offers the one cure for cancer and success in this depends absolutely upon an early diagnosis. Three facts are essentials, first—a close study of the laboratory findings and symptomatic details in all cases of gastric disease that do not accurately or most plausibly belong to benign affections; second—full experience in observing and examining cases of gastric disorders by one who is always on the alert for cancer and who has a courageous, willing and intelligent patient to deal with, and lastly—the assistance of a surgeon whose depth of mind, as well as whose technique of hand, is broadened by ripe experience. Cancer in its incipency is a small accumulation of cells, causing no symptoms and cannot be diagnosed. The cells multiply rapidly and clinical changes occur which are mostly objective. The one keynote is the constant and progressive presence of significant findings in the contents from these stomachs. Very early, we have hemorrhage, slight in amount, always occult. When constantly present, be on your guard.

Pus Cells and Bacteria. As stated before, there are no pus cells in a normal stomach and when found, are indicative of ulceration. Are of especial significance, when found in connection with red blood cells. Bacteria found are the staphylococcus, streptococcus, diplococcus and Boas Oppler bacillus.

Hcl. In the beginning of cancer in an otherwise healthy stomach, the acid is mildly increased, due to the irritation of the growth or its toxins—after this it takes on a steady fall downward. In some cases of cancer it may be present to the

very end. As the Hcl decreases, the organic acids begin to appear. Tests for their early presence should be made, as well as for evidence of delayed motility. There is liable to be a retardation in motility before actual dynamic obstruction results. These early analyses require frequently repeated examinations of the gastric contents and it may require a few weeks before you can come to any definite conclusions. The various tests may be present early. Subjective symptoms are of little or no value in making an early diagnosis, because many cases begin and progress markedly without any of them. When they are present, the other benign and simple stomach conditions usually have more of them or the same in a more intense form. Of some value is the loss of weight. Begins early in a slow manner, a loss of a pound or more a week is suspicious.

In closing, let me state that in patients who present themselves for treatment of gastric troubles, view with suspicion every case over 40, not showing improvement after a course of treatment, no matter what the diagnosis may be. At those ages, be on your guard with every case, giving a history of a good stomach before the present illness. The X-ray is also of assistance early. With a reasonable certainty that cancer exists, the case should be turned over to the surgeon for an exploratory incision and if a diagnosis is confirmed, total extirpation of the diseased area, glands, adhesions and metastases should be performed. Among the additional points that a few of the cases show from a clinical standpoint are: a persistent intercostal neuralgia with a failing health and enlargement of the gland of Virchow. These are rare. In the first instance, the lower intercostals are affected and in the second, the gland mentioned, is a small lymphnode just behind the clavicular insertion of the sterno-cleido-mastoid muscle, ordinarily not palpable. This should be felt for in every suspicious case of thoracic or abdominal neoplasm.

A VERIFICATION OF MERCURIUS CYANATUS.

BY

WALTER G. MEAD, M.D., ARLINGTON, N. J.

(Read before the New Jersey State Homœopathic Medical Society).

My reason for writing this paper is not because I have something new to present, but rather to recall to your minds in these days of vaccines and anti-toxines the idea of the power of the Homœopathic remedy.

Several years ago while I was practising in New York State, I was called over the line into Pennsylvania to see a case of sore throat. Fast pulse, high temperature, great prostration and a membrane covering tonsils and pharynx and extending up into the naso-pharynx as far as the eye could reach, of a brownish-gray color with the foul-smelling odor of the breath made up a diagnosis of diphtheria. My office was nine miles away. Culture tubes and anti-toxine were not procurable for twenty-fours at least. I dispensed Cynade of Mercury 30 cent. dilution 15 drops in a half glass of water, to be given one teaspoonful hourly. I went home with many misgivings and was agreeably surprised the next day to find the patient improved. I continued the remedy to full recovery with sequalæ.

In January 1915, I was called to see three children in one family ill with sore throats. All had white patches on their tonsils, Alice aged ten was weak and prostrated, the others were playing around as usual. Not feeling sure of my diagnosis I took cultures and dispensed Mercurius Cyanatus 30 cent. trituration, deciding to wait for the report from the culture before giving anti-toxine. The next morning I found Alice slightly improved, John aged eight with a more fully developed membrane and his general condition worse, while George aged four who had shown only a slight membrane was in good condition and the membrane had not increased. Procuring anti-toxine I put it in my overcoat pocket. The report from the culture was positive, a true case of diphtheria. In the afternoon the cases were about the same. I continued Merc. Cyanide. The children continued to improve from day to day; John being the most seriously ill, yet was never in an alarming condition, while George whose membrane was only

just beginning to form when I began giving Merc. Cyanide, was so slightly ill that it was very hard for his mother to keep him in bed. Alice had a moderately severe case. I had no occasion to use anti-toxine. Cultures taken on the 10th day were reported negative.

Mercurius Cyanatus has proved of value to me also in treating scarlet fever of the aninoid form.

Concluding I want to say that I have used anti-toxine many times and consider it a wonderful remedy, but in Mercurius Cyanatus I think perhaps we have a remedy which in selected cases is even more powerful.

PLAY—ITS EFFECT ON METABOLISM.

BY

JOS. PETTEE COBB, M.D.

(Read before the meeting of the A. I. H., 1915).

PLAY is the first physical expression of the infant, and the realization of the fact that he has accomplished a movement resulting from his own volition, gives the infant one of his earliest senses of pleasure. The satisfaction of being able to execute a movement of his own volition leads him to make greater and greater efforts, which call for the co-ordinated operation of an increasing number of muscles, so that we may truthfully say that play is the first educating influence which the infant appreciates.

We are in the habit of recognizing play as a natural expression of activity, not only for the infant but for the growing child and even on into adolescence, but it is only recently that the appreciation of its full worth as a mental and physical developer has come to us; we recognize that it is not only the infant's and child's first expression of mental action transferred to physical action, but we must also recognize that even after childhood, in youth and adolescence, its power of stimulating growth and development is equally as beneficial, equally as important, as in the case of the infant. Furthermore, the world is beginning to appreciate the fact that the best physical growth is obtained under the influence of properly selected

and properly carried out activities, in which the play element has an important part.

The development of a child is a co-operation of mental, physical and nutritional activities. Here as everywhere else in nature there is an effort at a proper balance of demand and supply—a demand for activity and a supply of the energy that makes the activity possible. A capacity for work is developed by the intensive activities which originated from within. Play is superior to any form of work as a developer of mental and physical capacity, because of its emotional content. Enthusiasm drives and impels the child or youth or adult to unusual efforts, carries the burden of sustained efforts to a far greater exertion than any other form of stimulation, because it is an internally impelled activity and not one dependent upon master or a stimulation from without.

Play is a combined mental and physical effort induced from within depending upon self-evolved, self-sustained impulses. Emulation, craving for head-ship and desire to outstrip his rivals, will drive the child, the boy, or the man, to greater efforts, to attempts at the seemingly impossible more powerfully than any outside influence or command. No parent's order, no taskmaster's scourge, no money prize, has the power of compelling initiation, sustained effort, or supreme attempt that the individual's own will or love will induce.

The instinctive play of the infant early gives place to the collective forms of play so dear to childhood which, in turn, yield to the organized forms of play toward which the youth early shows his tendency. Organized forms of play find their expression in the adolescent period and maintain a stronger hold on him than any of the individual forms of play; moreover, the powerful influence which these organized forms of competitive play have for the individual, even when he has outgrown his youthful stage, is evidenced by the enthusiasm created by the well contested base-ball or foot-ball game, a boat race, or other forms of sport. We must admit, then, that the sports of youth, that the competitive athletic efforts of adolescence and, later on, the more dignified and yet keen athletic contests of our seniors—on the golf field, for instance—are all evidences of the natural instinct for competitive play—an interest which has been seriously repressed in practically all of America until quite recently.

Let me remind you also of the fact that man is an out-door

animal; that his heart and lungs and nervous system were made for great and sudden exertions alternating with periods of repose; that unless these organs have these alternating periods of unusual exertions and repose they waste away and become diseased. The uncongenial uses which we provide for them in our ordinary routine life of the well behaved youth, adolescent and adult, are not conducive either to the best development of the human animal nor to the maintenance of the highest grade of personal activity nor to the best defense against disease invasion. Emulation, self-impelled effort, strife, are all-impelling incentives from within, and these intrinsic impulses lead us to higher grades of effort than either child or adult will make from any intrinsic stimulation.

A wave of enthusiasm for play, however, has been sweeping over this country during the last few years—a wave that has been gaining momentum with every year and with every convert—a wave which has undoubtedly accomplished a great deal of good but which, unless confined by our sober judgment, will lead us to pay more attention to sports and athletic combats as exhibitions to please our mind rather than as methods of developing our bodies.

Only a few years ago there were a scant half dozen golf grounds or country clubs in this country. Now every city of any size has one or more, and the large cities maintain them by the dozen. Ten years ago there was a serious discussion among university presidents whether universities should not give up competitive sports in order that more time might be spent in educational pursuits and to prevent the students becoming too devoted to physical prowess. The school houses built in our cities more than five years ago were seldom provided with a playground: recently, however, I have seen it stated that if a city has only room for a school, without a playground, it would be better for the future of the city to take that room for a playground and let the school go.

The child's instinct for play under our old methods was blotted out as early as possible, the youth and the adolescent were expected to take the serious side of life and work not as a means for physical development but as a means for another end—the help and maintenance of the family—and it was believed and taught that this work, especially if physical work out in the open, was a better developer and a better educator than play. As evidence that this theory is losing ground to-

day, I want to call your attention to the fact that up to 1908 New York had spent \$15,000,000 on its playgrounds and that in the few years prior to 1909 Chicago spent \$11,000,000 on playgrounds and field houses, and that President Roosevelt, himself one of the best examples of the consistent apostles of play, commented on this fact as the most stupendous work for the benefit of a city ever done by any city in such a short time.

All these plays which I have been referring to are what are known among educators as the *big muscle plays*, which are really the developers of organic powers, the educational sources of vigor, resistance to disease and general nervous vitality. More could be said about the benefit of organized, systematic effort of small muscles and the exceptional value which such mechanical work has in the development of mental perception and quickness of execution, but as I am interested now in bringing to your notice only that part of the subject which deals with Metabolism, I am trying to confine myself to a discussion of the forms of play which have most to do in physical development.

Metabolism is a synonym for growth and development, and is really the most easily observed effect of any physical activity. Metabolism, however, is not such a simple thing as it is often thought to be but includes within itself all of those functions which go toward the development of tissue of any kind, including the processes which convert food supplies into proper material to be assimilated, the activity of organs which elaborate this material into such form that it may become a part of the tissues of the body, its method of behavior when it is a tissue, and the methods by which we get rid of the waste material when the tissues are used up. The two master tissues of the body are muscle and nerves. Nerves and muscles carry the brunt of all of our efforts, and it is on the proper building up of these two tissues that so much depends in the make-up of the individual.

Respiration, circulation, digestion, assimilation and elimination, all have an important bearing in Metabolism. Any impairment of any one of these functions will seriously affect the kind of tissue building done by the body, whether it is the tissue building of the two master tissues—nerves and muscles—or the specialized forms of tissue constituting the important part of individual organs. It does not require any lengthy

discussion on my part to point out to you that two of these functions, viz., respiration and circulation, are very materially influenced by physical activity, and that the more nearly the work approaches play the more emotional influences are added to the physical effort, the more thoroughly the individual is driven to the extreme effort, the more these functions are influenced by this physical activity. The use that is made of food supplies, the character of material that is manufactured out of such supply, the vitality of the tissues which are the end product of food supply, depends more upon the amount of oxygen supplied to the metabolic organs than upon any other one thing.

Play, which means sustained effort usually in the open air, brings more oxygen to the blood corpuscles than anything else can do, while the increased activity of the heart materially hastening the blood current distributes this oxygen more thoroughly than is done under any other stimulus. Add to this the pleasurable excitement that comes in the self-imposed strife, in the supreme efforts which the individual makes, and we have a combination of all the conditions which make for the best activity of Metabolism.

Professor Hawk has shown that violent muscle exertion causes an immediate increase in the number of red blood corpuscles in a unit volume of blood, accompanied by a leukocytosis: the specific gravity increases proportionally with the red corpuscles—

“The increment in the number of corpuscles is so prompt as to make it probable that the primary agency in this phenomenon is not the loss of water from the body, but the discharge of a large number of sidetracked corpuscles into the general circulation.”

“The splanchnic area appears to be the chief reservoir for reserve red corpuscles.”

The storehouse of red corpuscles ready for work and responsive to a sudden call is another evidence that the animal is fashioned for alternating periods of exertion and repose. It is important to note that it is the vigorous physical effort that not only calls for this extra blood but also that is the vigorous and continued effort which is the important factor in providing the supply, in filling the storehouse.

Kirk has very aptly described the animal body as a machine for converting potential into actual energy. Potential energy

is supplied by the food and varies very materially with the character of the food. The metabolic processes of the body store up this potential energy, ready for demand, ready to be converted into actual or Kinetic energy, as the needs may be required. The individual's power of developing Kinetic energy at any one moment is limited by the amount of potential energy stored up. The potential energy is stored up not by the metabolic process of one hour, one day or one week, but by the regular, methodical, systematic work day after day, week after week, and year after year. Anything which regularly and systematically increases or spurs on these organs to their highest grade of efficiency as is done under forced respiration and circulation makes for the best physical development.

It would not be right to leave this subject without calling your attention also to the destructive processes—Katabolism—and the need of getting rid of the waste material. It is not my intention to go into any physiological discussion of what is produced when a nervous impulse is generated, when a muscle contracts under ordinary or extraordinary impulse, or when other organs and tissues are working under their usual or unusual forms of irritation. Suffice it to remind you that every bit of work done means the using up of tissue—Katabolism—and that every katabolic change means the setting free in the system of waste material, some of it highly toxic—all of it deleterious—and that a perfect elimination is as necessary for the maintenance of the highest grade of physical efficiency as a proper intake of supply. The same things which influence the efficiency of respiration and circulation determine the efficiency of the eliminating organs; the best grade of work is done by them also under the far-reaching effects of forced efforts combining pleasurable mental activity with physical exertion.

Somebody has said that the making of a man is food, air, sunshine and exercise. If the word "play" had been substituted for "exercise," or the adjective "pleasurable" inserted before "exercise" we could find no fault with this definition.

LUES.

BY

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THE essential purport of this paper concerns certain interesting observation cases dealing with differential diagnosis which are based on the method of A. Wassermann or other men and exclusively so. In order to make a prompt differential diagnosis on the varying stages of syphilis and upon the different findings relating to that disease several things must be passed in review. As one or two pluses do not mean spirochetes in certain obscure cases, we must first consider the different methods used in sero-diagnosis. This summary would comprise: (1) the aqueous extract of syphilitic liver. (2) Alcoholic extract of syphilitic liver. (3) Aqueous extract of normal organs. (4) Alcoholic extract of normal organs and lipoids.

For the present there is no settled agreement as to whether the methods which work with "antigen" from non-luetic organs, give positive results only where lues really exists, *i. e.*, whether the clinical specificity is as far reaching as with the use of luetic material. In fact the reaction with alcoholic heart extract seems to offer rather a good guarantee in regard to clinical specificity. Mueller found 500 non-syphilitic control cases reacting almost without exception in negative fashion and only a few cases disclosed a trace of hemolysis prevention. Among the "normal" were cases of carcinoma, inflammation of the kidney, typhoid fever, pneumonia and more especially tuberculosis. Boas, likewise, obtained negative results with alcoholic heart extract in 77 normal individuals. However, up to the present time, a truly wide experience has been had with the original Wassermann method, while the deviating substitution methods have been used in many instances simply as laboratory orientation experiments.

Therefore, the Wassermann technique, with which the first large series of experiments with non-luetic material was completed, is the method most preferable (Vide Congress for Internal Medicine). Again, a question arises. Provided the

luetie condition actually does exist, are all the methods in vogue for the detection of the complaint of equal valuation as regards the percentage of positive results? It seems that in order to answer this question one can not rely too fully on statistics. The values claimed by different authors, differ markedly even when working with the same method. To instance—Brick and Stern claim only 54 per cent of positive results in their tests, whilst Fischer and Meier bring the figures up as far as 83 per cent, although in both cases aqueous extract of luetic liver were used. In personal laboratory work the writer has used aqueous extract of the normal organs and nearly 80 per cent of positive results have been reached. This is especially true in cases where diabetes, furunculosis, tuberculosis and inflammation of the kidney were the preponderant diagnoses. Under any circumstances, in those cases, the poor condition of the bodily resistance, favors the lodgment and the subsequent proliferative capabilities of the spirochetes in the different structures bearing the attack. Different variants therefore are the direct causes of unstable results in the hands of competent workers. The different variants are the varying activities of the extracts, differences in the clinical material itself and last but not also of prime importance a variation in the technique employed.

The only fact and the only sure fact is, that it appears to be proven that an extract containing the active substance is found only in infectious luetic material and it may be taken for granted that the extra component in the extract can be considered the antigen, and the one in the serum, which reacts with it, the counter body. From these comparative investigations different sides were chosen by workers in this particular field of study. Wassermann and his adherents considered the "antigen" as a direct derivative of the spirochete pallida, a stand that has never been satisfactorily proven. In fact, there has never been any discussion on this point, but there has been some with a view of determining whether the reacting substance was found only in infectious luetic lesions, that is, in those containing the spirochetes. It was universally agreed, however, that the antigen was bound up in the luetic lesion, though it cannot be looked upon as a living portion or metabolic product of the spirochetes. Still less is the view held that the antibody represents a protection substance but only a specific reaction product. Later investigations by Levaditi and Brick

have proved that the antibody is not an immune substance in the strict sense. In general and from a practical standpoint, is the diagnosis positive, if spirochetes are not found? Could there possibly exist ground for the contention of a differential diagnosis between syphilis and non-syphilis? The writer had an excellent opportunity to observe a few highly interesting cases in the Norwich State Hospital where cerebral specific disease does exist among such affections as dementia praecox, general paralysis of the insane and mania depressiva. Syphilis in these unfortunates was the exciting cause and the differences were not to be incriminated from the standpoint of whether the lesion had been innocently acquired through inheritance or basely acquired through an infringement of the Seventh Great Canon.

The findings were distinctive along certain lines. Cases presenting no clinical symptomatology as far as lues went, proved to be positive in regard to the Wassermann reaction and vice-versa. Individuals infected with tubercle, however, where the disease was in its second stage and in those where highly developed furunculosis took place, the test proved to be negative. The test was negative in cases of advanced nephritis also. But why was this so? Probably the delicate protozoa could not be detected. Is such a diagnosis correct? Can the diagnosis be called reliable? In certain affections with albumen, casts, high specific gravity denote one thing and that one thing is an inflammation of the kidney substance. But what about those cases not disclosing the above. How about tuberculosis without the demonstrable bacilli or again the existence of true diphtheria with the Klebs-Loeffler organism? How about that pestiferous complaint gonorrhœa with the gonococcus? How about the gleety individual with a perceptible glairy discharge fifteen years after an initial blennorrhœa? Another thing—some competent observers discovered and regularly found spirochetes in cases following anesthesia, malaria, beri beri, pellagra, etc.,—how about those cases? Is then the Wassermann idea and its positive sero-diagnostic confirmation reliable or not reliable? Or is this really only true in special cases, in hereditary cases, in acquired cases, or not at all? A real affirmation of the theory of Wassermann and his co-workers, that this is a specific reaction for lues, would be that when luetic serum is mixed with extract of non-luetic organs complement fixation never takes

place. Later, however, it was maintained that the reaction of the serum of luetics was not connected exclusively with the luetic "antigen" as had been accepted, but that the reaction capacity could be proven to a certain degree towards non-luetic "antigen," *i. e.*, aqueous extract of normal liver. Marie and Levatidi were the first to publish the statement that they had succeeded in obtaining the phenomenon of hemolysis prevention with the spinal fluid of paretics and extract of normal liver, although in a concentration of ten. This was also observed, but in only one case (spinal fluid of a tabetic) by Weygandt and Weil.

STOELTZNER'S CASEIN-CALCIUM MILK IN SUMMER DIARRHEAS OF INFANCY AND EARLY CHILDHOOD.—During the past summer W. L. Rost (*Arch. Pediatrics*, 1914, xxxi, 849) has used casein-calcium milk in the treatment of fifty-six cases of summer diarrhea. No patient ill less than three days is included in this series. Age varied from three and one-half months to two and one-half years. Many of the children were rachitic, anemic, poorly nourished, underdeveloped and underweight. The original formula was adhered to as a rule; dextrimaltose was rarely added before the third day; in about 50 per cent. of the cases, cereal decoction was employed instead of water; small amounts were given at four-hour intervals; water *ad libitum* if necessary; the total quantity of food was increased from 2 to 4 ounces daily, depending upon the condition and age of the child. It was well taken by all except one. This was a child of two years, extremely difficult to manage by the mother. This milk was given for periods of time varying from four days to several weeks. No vomiting occurred. A district nurse visited all of the out-patients and demonstrated its preparation; the mothers experienced little difficulty in making this food after being shown once. All cases showed improvement in about four days, in most children in two days assuming a yellowish color, semisolid, one or two daily. About 49 per cent. gained and 21 per cent. remained stationary; in 30 per cent., the weight could not be observed on account of the very irregular attendance of the mothers. On account of the simplicity of its preparation and inexpensiveness, casein-calcium milk is particularly useful in the management of nutritional disturbances applying to out-patient departments for treatment. It may be readily used in those nutritional disturbances where Finkelstein and Meyer's protein milk is indicated, but cannot be employed on account of its expense or taste.—*Am. Jour. of Obs. and Diseases of Women and Children*, March, 1915.

EDITORIAL

THE MEETING AT CHICAGO.

THE recent convention held in Michigan was a notable success. Aside from its purely professional character, the social amenities thereto, were quite distinctly advantageous. The dinner, given in compliment to Dr. James C. Wood of Cleveland proved a great success, a circumstance earnestly welcomed and assuredly popular, for the work he has accomplished for the Homœopathic School along surgical lines. The re-election of Dr. S. M. Hobson, as Secretary of the Institute, was the direct outcome of her untiring abilities in that office and for the high plane upon which she placed the Journal of that official body.

Business meetings in the main were not in the least irksome, while the genius of dogmatic repartée in the person of one James Krauss of Boston, certainly seemed to preside over the Section on Clinical Research in fitting fashion, and held that important bureau quite up to snuff in their enlivening sittings and discussions. Interest in the great European war now raging and its relation to the usefulness of the homœopathic practice in military medicine was aroused by the splendid talk given by Dr. John P. Sutherland, of Boston. His note of urgent support was suitably favored and a fund was raised by the doctor and a friend for the purpose of materially aiding our confrères across the seas for their hospital at Neuilly. From Dr. Sutherland it appears that most urgent aid is necessary as regards the surgical dressings of calendula cerate. The results of treatment of this splendid unit should make excellent reading for future medical students of this war. Already excellent results have been obtained.

The sections upon Homœopathy were very instructive. Dr. A. L. Blackwood, of Chicago gave a very interesting paper upon alfalfa, and prominence was given in the lay press the remarkable results which he had obtained in stimulating appetite in both humans and guinea-pigs by the administration of the drug in drops of the tincture. His results will doubtless be

well corroborated in future practice as the science of nutrition is so intimately wrapped up in the treatment of disease, and more especially of chronic disease, that it will bear much future investigation. Just now there seems to be a great wave of therapeutics along the lines so well grounded by Hahnemann himself. There is a universal veering towards minimal dosage and cognate specificity, most especially noted in preventive vaccination, serum therapy, vaccine therapy and the most useful of all the Homœopathy of Hahnemann. Certainly the papers on this most important section, and the tremendously important paper by Dr. W. F. Baker upon the vocational aspect of a knowledge of homœopathy was all very deeply interesting. Taken altogether, the meeting of the Institute was very successful and it is to be hoped that the one to be held next year will be equally so, because of the fact that the one on the horizon will be broader in scope, having an international character.

It would seem therefore, that it would be most reasonable to expect the next meeting of the Institute to be held on some coastal town or city on the Eastern seaboard of the States because of the convenience thus accruing to foreign members of our profession coming from Europe to attend the meeting.

DONALD MACFARLAN.

THE STATUS OF HOMŒOPATHY IN PENNSYLVANIA AND ITS RELATION TO THE STATE SOCIETY.

As the time for the annual meeting of the Pennsylvania State Homœopathic Medical Society is near at hand, the thoughts of homœopathic practitioners naturally turn to a consideration of the status of homœopathy in this state and its relation to the State Society. Frequently there is no need for anyone to remain long in doubt as to the beneficial influence of the work of the State Society on the interests of homœopathy and of homœopathic practitioners in Pennsylvania. In fact the history of the State Society clearly and completely reflects the history of homœopathy. The principles that the State Society has upheld in its scientific work, the legislative activities that have been carried out by its representatives in behalf of the homœopathic institutions and of homœopathic

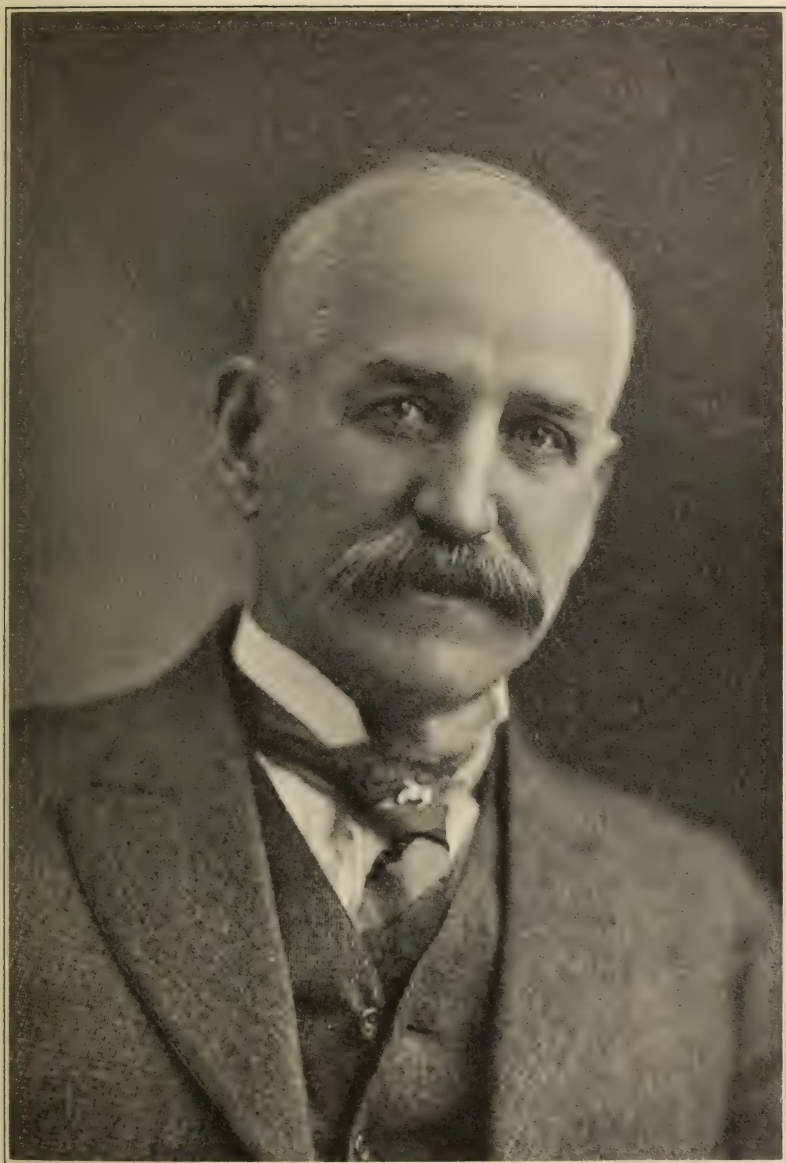
physicians and its encouragement of fraternalism and of good fellowship among the individual practitioners of our school, have been the forces that were behind every step of homœopathic progress and have secured and preserved to us privileges as physicians and coherence as a school, that would otherwise have been impossible of attainment. So evident are these facts that we cannot see how any thoughtful homœopathic practitioner can avail himself of the rights and privileges obtained for him through the efforts of the State Society and yet refuse to support by his influence or by his financial contributions the work of this organization.

The condition of homœopathy in Pennsylvania during the past year has been more than encouraging. Several new homœopathic hospitals have been erected and are now in successful operation. The Hahnemann Medical College of Philadelphia has attained an enviable record of one hundred per cent. successful applicants for examination before the Board of Medical Education and Licensure of Pennsylvania; a record which it shares but with two other medical institutions in this State.

Much excellent work has been done by Dean Pearson of the College particularly in bringing before the attention of the profession the advantages of securing a medical education at Hahnemann Medical College and, as a result, there is every prospect of a freshman class of fifty men—the largest class in many years.

The work of organizing county and district units in Pennsylvania has been actively carried on through the earnest efforts of our energetic president, Dr. B. F. Books. It is safe to say that no president in the history of the Society has been more faithful or more active in visiting the various sections of the State and insisting that the members of our school in unorganized counties should cease talking about the advantages of organization and get to work and formulate an actual working society. Dr. Books has met with very encouraging success in this work and it is confidently expected that at the meeting at Buena Vista, plans will be worked out for the formation of a House of Delegates based upon district and county representation for the purpose of carrying on the routine business of the State Society.

Dr. Bernstein has carried on an active publicity campaign in connection with the annual meeting and details as to trains.



DR. B. F. BOOKS
President Pennsylvania State Homœopathic Medical Society

rates for rooms, etc., can be found in the news section of the present issue of the *HAHNEMANNIAN MONTHLY*.

For the benefit of those who are not already aware of the fact it may be stated that the meeting will be held at Buena Vista Springs Hotel, September 7th, 8th and 9th. Buena Vista is situated in Franklin County, about seventeen miles below Gettysburg and can be reached from Philadelphia via Baltimore in about four hours. The hotel is situated in the mountains at an elevation of about 2,000 feet above sea level and commands a magnificent view of the famous Cumberland Valley. The usual out door sports such as golf and tennis are provided for and a well managed garage for those who care to go by motor. The scientific program is well filled so that from both an educational and social standpoint the meeting offers unusual attractions.

The question of new members is one of importance and there is no more practical way of aiding the progress of homœopathy than by hunting up your nearest professional confrere and inducing him to sign a membership blank.

G. H. W.

ENURESIS.—A study by A. B. Schwartz (*Boston Med. and Surg. Jour.*, 1914, clxxi, 631) of 226 cases of enuresis, 148 males, 98 females, 3 diurnal, 134 nocturnal, and 89 both diurnal and nocturnal, leads to the conclusion that the cause of enuresis in children is not the same in every instance. In some the nervous element undoubtedly plays a part, and in others faulty habits. Local irritation from any source is a predisposing cause. Excessive fluids result in greater secretion of urine, while too little fluid results in a concentrated urine, which, whether it contains crystals or not, may irritate the base of the bladder and cause the desire for frequent micturition. Enlarged tonsils and adenoids apparently have no connection with enuresis. Digestive disturbances did not in themselves have any connection with the condition, but it is conceivable that constipation may be a predisposing factor.—*Am. Jour. of Obs. and Diseases of Women and Children*, March, 1915.

GLEANINGS

A SCARCITY OF YOUNG DOCTORS IN THE COUNTRY.—How the dean of a medical college in Philadelphia receives requests from time to time from rural communities to send young doctors is related in *The Churchman*; but the young doctors will not go. In the last decade the number of medical colleges in the country has decreased well nigh one hundred per cent., and the number of students from 30,000 to 16,000. There are now fewer graduates in medicine, while medical standards have risen to an imposing degree. There are also fewer failures in medical practice; yet all too many, especially in the cities. A twofold evil then still remains, arising out of a lack of medical attendance in rural communities, and a decided super-abundance of doctors in cities and towns. Corroborative evidence is contained in the address made by Dr. Stuart McGuire, president of the Southern Medical Association, at its annual meeting in November. Doctor McGuire emphasized one phase of the situation—the increased expenditure of time and money now required for the development of the medical fledgling, who “is conscious of the sacrifice he has made, and usually overappreciative of the attainments he has acquired. He desires to be a specialist and will only do general practice as a means to an end. He is determined to locate in a city and unwilling to settle in the country, preferring to starve his ambitions in the other. This results in an urban congestion and rural depletion of medical men which has reached a point to give serious concern, and for which some remedy must be found.”

The great trouble is that many matriculates coming from the country to the great civic medical schools are so attracted by the meretricious urban glamor that they conclude on graduation to establish themselves where they have studied. With no other capital than a square jaw and a sublime (and touching) faith in themselves, they determine to remain permanently, to starve if need be. During those years when men normally should marry, they lead pathetically barren lives. Life's honorable obligations they meet with difficulty, or in humiliation fail to meet. Many such men finally make good; how many are the failures after all those years one does not like to think.

In former years rural practice was hard and unremunerative; it need not be so today. One's motor car takes one quickly over good roads over great distances; among one's patients one has, much more than formerly, prosperous folk; commuters having business in the city; people who go to the country for health or recreation. The medical journals and the other literature of the day, the discussions at the country medical society are altogether adequately informing and easily keep one up to date. A few weeks of post-graduate work in cities is a positive recreation. The telephone, the parcel post, the self playing musical instru-

ments, the trolley expresses—such factors have transformed the character of life materially and socially in country districts throughout the length and breadth of the United States. Wherefore, young colleague, unless the city has been your home, unless you have abundant capital to enable you to wait, unless you have unusual and assured prospects, you are far better off beginning your career in the country than in the big city.—Editorial in *The New York Medical Journal*.

THE INGUINAL ROUTE OPERATION FOR FEMORAL HERNIA.—There are three important misconceptions regarding femoral hernia, viz.—that the repair of a femoral hernia is an essentially simple operation, that recurrence is a great rarity, and that as contrasted with the typical inguinal operation, the technique for femoral hernia does not require an anatomical exposure of the operative field. The statement that femoral hernia does not tend to recur, if only the sac is ligated and no attempt made to close the femoral ring, is untrue. In the case of inguinal three factors are supposed to safeguard against recurrence: (1) High ligation of the sac; (2) snug closure of the internal ring, with secure buttressing of the abdominal wall, and (3) aseptic wound healing. It is difficult to see why these same factors should not govern in the case of femoral hernia. Different authorities quote from 36.7% to 8.6% recurrence after operations for the cure of femoral hernia. This article aims to show that anatomical exposure of the operative field is essential and by making it so we render femoral herniotomy a much simpler operation and much less likely to be followed by recurrence. When a femoral hernia is attacked through a thigh incision, it is physically impossible to secure an anatomic exposure; this statement is beyond all doubt or question and may be readily proved by anyone. Probably the most important structure utilized in the closure of the femoral ring is Cooper's ligament. The inguinal attack on femoral hernia has not come into more general use mainly because the various authors who have recommended it have all emphasized the importance of Cooper's ligament without giving any clear idea of what or where it is. Indeed, most of the text-books on anatomy fail to mention Cooper's ligament and those that do, give but a meagre description. When the ramus of the pubis is exposed by an inguinal incision, it is seen to be covered by a thick, fascial bundle. This fascial bundle is Cooper's ligament. It marks the point of fusion of the pectineal fascia, Gimbernat's ligament, behind this the posterior pillar of the external ring, and finally the transversalis fascia, re-enforced by the ligaments of Henle and Hesselbach. The operation as described by Seelig and Tuholske is practically identical with that furnished by Moschcowitz and briefly the steps are as follows: (1) The incision is the usual one for inguinal hernia, modified in so far that its lower end approaches the pubic region more closely. (2) The aponeurosis of the external oblique is divided in the direction of its fibres. (3) The upper flap of the external oblique aponeurosis and the conjoined internal oblique and transversalis are retracted upward and the lower flap of the external oblique is retracted downward, bringing Poupart's ligament into full view. The round ligament or spermatic cord is now retracted upward and presents a thin layer of fascia just anterior to the peritoneum—the transversalis fascia. This fascia is nicked and divided along

the line of the original incision and retracted in the same manner as the other structures and brings into view the peritoneum and the neck of the sac. The deep epigastric artery is usually encountered at this stage and may be retracted or divided between ligatures. (4) The peritoneum is opened just as it converges to form the neck of the sac. Through this opening the hernial contents are pulled out of the sac and replaced in the peritoneal cavity. If the intestine or omentum is strangulated, it may be easily liberated by cutting Gimbernat's ligament, which is in full view, thus making it impossible to encounter uncontrollable hemorrhage from an anomalous obturator artery. If the hernial contents are adherent to the sac either: (a) the sac is not adherent to the tissues of the thigh (and this is nearly always the case) and traction on the hernial contents pulls the entire sac out of its bed, converting the femoral into an inguinal hernia, or (b) the sac is adherent to its bed, in which case the inguinal incision is continued downward on the thigh over the hernial protrusion, thus enabling the operator to dissect the sac free from its adhesions to fascia and cellular tissue. (5) The sac is everted and tied off by transfixion ligature or by suture, sufficiently high to obviate a protrusion or any form of potential hernia. (6) This step consists in the closure of the femoral ring which is exposed to full view by retracting the lower flap of the external oblique downward and outward and by retracting the skin, the upper flap of the external oblique, the conjoined tendon and the transversalis fascia upward and inward. The ring is bounded by the external iliac vein externally, by Poupart's ligament anteriorly, by Gimbernat's ligament internally and by Cooper's ligament posteriorly. With a small full curved needle a deep bite is taken through Cooper's ligament just internal to the iliac vein and then another bite through the lower flap of the transversalis fascia and the edge of Poupart's ligament. Another suture is similarly placed internal to the first one and a third one still further internally, if necessary. The most internal suture always picks up Gimbernat's ligament. When these sutures are tied they approximate Poupart's to Cooper's ligament and effectually close the hernial orifice. (7) The last step resembles the ordinary closure of an inguinal hernia. Chromic gut sutures approximate the internal oblique and transversalis muscles to Poupart's ligament. It is customary not to transplant the cord or round ligament. Finally, the external oblique is sutured and the skin incision closed.—(*From Surg., Gynecology and Obstetrics*, Jan., 1914).

W. A. VAN DEVEER, M. D.

ETIOLOGY OF SCARLATINA.—An editorial writer in *Presse Med.*, by *Am. J. Obst.*, questions whether the old idea of the propagation of scarlatina by means of scales has any foundation except as the scales have become inoculated by discharges from the mouth and throat. He explains thus the undoubted cases of conveyance by means of letters, and clothing that has been carried for long distances. The hands have been infected from the mouth and so scales have remained in the letters, or the discharges have remained on the garments. Persons who approach the patients may carry germs in their clothing, shoes, and hair when they have come in contact with discharges. The germ of scarlatina is not eliminated directly by the skin.

Inoculations of monkeys have proven the virulence of exudations from

the tonsils. The virus of scarlatina is very resistant and remains active for many months. The author believes that abortive attacks of scarlatina with no rash are frequent. At the same time the throats contain virulent germs, which they spread about because no isolation is carried out. Epidemics of scarlatina coincide with epidemics of sore throat and these sore throats are probably true scarlatina. A most important prophylactic measure is careful disinfection of the mouth and throat in all cases of sore throat. The scarlatina patient may convey contagion from the first moment of his illness, by the discharges from the mouth. By remembering these facts we shall be able to construct a better system of prophylactic care of the patient and insure the community against the spread of the disease.

LATE HEREDITARY SYPHILIS.—Veeder and James present a method of treatment of this condition with neosalvarsan and mercury, which is very effective in their hands. (*Am. Jour. Dis. Children*). They have given over 200 injections of neosalvarsan most satisfactorily. Their general custom, subject to such durations as the case may demand is as follows:

Three or four intravenous injections of neosalvarsan are given with gradually increasing dosage two or three days apart. Then mercury is started, with small doses, which are gradually increased until the patient is taking a fairly large dose. In a few weeks this is interrupted for a short time and then repeated. In a number of cases a second and third series of neosalvarsan injections are given alternating with the mercury. The mercurial treatment is continued for an indefinite period of time according to the requirements of the individual case, and in general until a negative Wassermann reaction is obtained, if this is possible.

The neosalvarsan dissolved in 1 c.c. of freshly distilled water for each decigram and injected intravenously with a glass hypodermic syringe. The preparation of the drug and the administration can be accomplished in from twelve to fifteen minutes. The dose varies with the age and clinical condition of the patient. Gray powder is the form of mercury employed.

SCHICK'S DIPHTHERIA TOXIN SKIN REACTION.—William H. Park, in speaking at the New York Academy of Medicine said the Schick reaction was the reverse of all the other tests in that a negative reaction meant immunization and a positive one meant susceptibility to diphtheria. The Schick reaction was due to the direct toxic action of the toxin of diphtheria; the negative reaction meant that the toxin was neutralized and a positive reaction meant that the subject did not have sufficient antitoxin in the blood to neutralize the toxin introduced. There was also the pseudo-reaction which was anaphylactic in type; in reality it was due to the endotoxins. It gave the impression of a much more decided reaction than the positive reaction; there was slight infiltration and hyperemia at the site of the injection.

Park exhibited charts showing the result of the Schick test in children, from the time of birth to the fifteenth year, and in adults when the toxin was administered in the various ways—subcutaneous, intramuscularly and intravenously. In children between the ages of five and fifteen years, 50 per cent. showed a positive reaction, so that half of the children between these ages were immune and half were not. Among adults, 70 per cent.

were immune and needed no immunization against diphtheria. In certain children, "once immune, always immune" seemed to hold good. In children who had had the disease the Schick test might be used to determine the limit of immunity.

At the Willard Parker Hospital they were immunizing all the children admitted to the scarlet fever wards, but only those who showed a positive Schick reaction. Of ninety children showing a positive Schick reaction, after an immunizing dose of antitoxin twenty became really immune and seventeen developed a larger amount of antitoxin in the blood. A child that gave a negative Schick test was perfectly safe among diphtheria carriers. Several other applications of this reaction could be made. One of these showed how rapidly antitoxin reached the skin, the toxic doses having been given six hours before the antitoxin by the different methods, —subcutaneously, intramuscularly and intravenously. When an intravenous injection of 1,000 units of antitoxin was given six hours before the toxin, it suppressed the reaction; when given four hours before, it greatly diminished the reaction; and when given two hours before, it absolutely prevented a reaction. When the toxin was given intravenously the reaction was increased.

There was another way in which the Schick test might be of some diagnostic value. If a case was supposed clinically to be diphtheria and one got a negative Schick reaction and a positive diphtheria culture, one might conclude that the patient was only a carrier and did not have a true diphtheria; that patient might carry a virulent bacilli and yet have a nonvirulent tonsillitis. About one third of the cases of diphtheria developed antitoxin while about two thirds did not. When one positive Schick test was found in a family, all the members of that family were likely to have a positive test. Park said they were now making experiments in the endeavor to vaccinate against diphtheria with the dead bacilli as they were doing against typhoid fever. They felt sure that an attack of diphtheria gave immunity for some time, but this immunity might be due to some other bactericidal substance.

The speaker cautioned his audience in regard to using the Schick test. The injections should be made intramuscularly or subcutaneously and one should use a fresh dilution, not one that had been standing for any length of time.

In response to the question as to how the diphtheria toxin was prepared, whether it was prepared like the tuberculin, Dr. Park said that the diphtheria toxin was prepared differently from the tuberculin, as in the tuberculin they wanted to keep the endotoxins while with the diphtheria toxin they tried to get rid of the endotoxins. They had been using a six-day product and were trying to get one of only forty-eight hours.

Park said the immunity seemed to be acquired; about 90 per cent. of adults and 90 per cent. of infants gave a negative Schick test. During infancy and the early years of childhood the immunity dropped off into 30 per cent., and then the antitoxin began to be produced again as the children grew older; why, no one knew. There was a large amount of antitoxin produced by some individuals; as much as 15 units had been observed and why it should continue to be produced beyond the apparent need was be-

yond comprehension. It might be that there was some saprophyte making it.—*Am. Jour. Obst.*, February, 1915.

SUGAR SOLUTION BY PROCTOCLYSIS IN POSTOPERATIVE TREATMENT—Barbee, in *Northwest Medicine*, says the results of his experience have been most gratifying. He is in a position to lay emphatic claim to sugar proctoclysis as a valuable adjunct in treatment where water is demanded and where one is unable to utilize the stomach for this demand.

By careful observation and comparison we are assured that postoperative shock is lessened, the circulation quickly equalized, vomiting diminished, thirst allayed, perspiration induced, kidney excretion increased, gas eliminated, ileus less common, and, as in most of these cases in which the stomach cannot be utilized for several days, a valuable food element is constantly absorbed.

Thus far the writer has met with only a few instances in which the patient did not satisfactorily absorb the solution. The most of these could be charged directly to faulty technique in the use of the "Murphy drip."

Plain water per rectum is slowly absorbed. Salt solution is more rapidly absorbed but is slightly irritating, and salt is contraindicated in many cases. Sugar-water is rapidly absorbed, is practically non-irritant, and seems to exercise a general stimulating effect.

The strength of the solution used is 15 gm. of cane sugar to 1 liter of water. It is administered by the (Murphy) drop method at the rate of 30 to 40 drops per minute. The rate may be increased or diminished according to the patient's need for water, or according to the rate of absorption. This rate will use approximately three quarts of the solution in twenty-four hours. The approximate caloric value of the contained sugar is 200 large calories.

It is an open question as to how this cane sugar is utilized by the body. If it be not converted and actually used as food to the tissues, then its presence in the blood stream acts as a tonic to the entire system. Landois states that cane sugar injected under the skin is excreted as such by the kidneys. Repeated urine examinations in many of the cases of this series fail to show its presence in the urine. In two of the cases of gastroenterostomy, for instance, the solution ran continuously for seven days. Nourishment in no other form was given. The patients did not complain of the slightest hunger, kept their weight, and no sugar appeared in the urine. These results led the writer to believe that the sugar administered by rectum is converted into glucose and utilized by the tissues.

The sugar water is started as soon as the patient is put into bed from the operating table. If there be much shock, if the patient be deeply anesthetized, or if vomiting, he is left flat until the position can be altered to a low Fowler, in which position proctoclysis is most successful. There are many conditions in which the patient must remain flat, but the great majority may and should receive some elevation at the head. Within a short time the pulse increases in volume, the skin becomes warm and moist, followed by free perspiration, there is much less or no thirst, vomiting is lessened, kidney excretion increased, and gas escapes. When these results are obtained and maintained, we are past postoperative shock and fear of ileus.

With a few exceptions these results will follow the use of sugar solution by proctoclysis.—*Ther. Gaz.*, March, 1914.

THE PREVENTION OF DISCOMFORT AFTER OPERATION.—While most patients dread operative procedures, because of the anesthetic or the operation, it is in a majority of cases soon learned that neither of these factors is of as great importance as the discomforts which are suffered after the main effects of the anesthetic have passed by and after the operative procedure has been accomplished to the extent that it is considered successful. Nausea, vomiting, and a sense of profound prostration, dizziness, and vertigo are often present, although, with the modifications which have taken place in the administration of anesthetics, these symptoms are by no means as severe as they once were in the majority of instances. Distressing thirst can be allayed by a hypodermoclysis, or by the administration of a salt solution by the rectum. It is of great importance that this salt solution shall not be hypertonic, since under these circumstances it will draw liquid from the tissues into the bowel instead of sending liquid from the bowel into the tissues; furthermore the hypertonic solution, particularly if it is used for any length of time, is prone to produce rectal irritation. When nausea and vomiting do occur one or two grains of acetanilide, placed dry upon the tongue or dissolved in a little shaved ice and brandy, will often act as an excellent gastric sedative, or, in its place, from one to five grains of chloretone may be used. A mustard leaf on the epigastrium may dissipate the sense of nausea. An ice bag on the head may be a comfort to the patient, particularly if, at the same time, a hot water bag is applied to the feet.

After operations upon the pelvic floor and pelvic contents, or upon the male bladder, it not infrequently happens that agonizing backache, due to strain of the sacroiliac joint, takes place by reason of the fact that sufficient support is not given to the lower limbs when the patient's pelvis is brought to the edge of the operating table. We have seen patients scream with pain on coming out of the anesthetic, because of this unnecessary injury. Oftentimes some of the discomfort can be removed by elevating the buttocks by the placing of a pillow under them, or by holding the thighs in such position that the sacroiliac joint has a different bearing from that which existed during the operation or while the patient was lying in bed. An opium suppository may be useful to aid in relieving this pain, and if there is a sense of fulness in the rectum because of the pressure produced by Sims' speculum, a 10-grain iodoform suppository, because of its anesthetic effect, will often be advantageous.

In the *West London Medical Journal* for October, 1914, there is an interesting paper upon this subject by Baldwin, who is senior surgeon to the West London Hospital. He calls attention to a number of measures used to diminish postoperative discomfort. When hemorrhoids are to be operated upon the rectum should be empty and clean at the time of the operation, and the aperient which is commonly used should be given not later than the morning before the operation. Saline aperients are to be avoided, as they lead to constant dribbling, but castor oil is advantageous because of its after constipating effect. Four hours before operation the bowel is to be washed out with warm water until it returns quite clear. Baldwin

does not think that it is necessary to stretch the sphincter in the majority of cases. He uses quinine and urea chloride as a local anesthetic, and employs after the operation as an antiseptic and anesthetic powder boro-chloreto-ne, injecting into the bowel one to two drachms of sterile vaselin from a collapsible tube. He then inserts a rubber tube $3\frac{1}{2}$ inches long and $\frac{3}{8}$ inch in diameter, allows it to project from the anus one inch, and applies a dressing. The tube permits flatus to escape and so prevents discomfort. For postoperative vomiting he recommends copious drinks of bicarbonate of soda and water. Milk should be particularly avoided, as it tends to the formation of gas and constipation. On the third or fourth morning after operation the patient is given an ounce of castor oil by the mouth and four ounces of warm olive oil are injected into the bowel with a tube. The tube is then removed. Baldwin calls attention to what we all know, namely, that it is of great importance that the patient should not be kept waiting prior to the operation in the operating room or near by, and that fussy friends, with anxious and tearful faces, should be excluded. He asserts that the idea that a patient after an abdominal operation must for days be kept rigidly on the back has not yet disappeared, although it should have done so, and believes that there are few instances where the dorsal position is absolutely necessary. Indications of intestinal stasis could be met with the hypodermic injection of pituitrin, to which, in his opinion, it is wise to add 1-100 of a grain of salicylate of eserine.—*Therap. Gazette*.

THE TOBACCO HEART.—Dr. Harlow Brooks, (*New York Medical Journal*, April 24, 1915), in an article on the above subject concludes that tobacco produces symptoms referable to the heart, of a very definite and characteristic type; first manifested by an increased rate with rise of blood pressure, later with a slowing and fall in pressure. These symptoms are apparently due to vagus effects and quickly disappear when the drug action passes. These symptoms all diminish in degree with habituation to the drug.

Prolonged excessive administration of tobacco induces arrhythmia and intermission. These symptoms are more or less persistently accompanied by a sense of weight or of pain of a dull persistent character in the heart region. Pain may be entirely independent of alterations in rhythm, though most likely to occur with a slowing of the usual rate. So far as can be surmised from experimental evidence and clinical observation, these symptoms are not due to vagus disturbance but to claudication of the coronary vessels. They are more likely to appear in chronic smokers than in beginners, and in long standing rather than in recent tobacco habituation.

Tobacco angina pectoris is in all symptomatic respects similar to the true angina pectoris by coronary disease. It occurs with considerable frequency in chronic tobacco poisoning; is unusual if not unknown in acute poisoning, and long habituation to the drug predisposes to this symptom. It is relieved by the usual vasodilators and by morphine. Is commonly succeeded or preceded by a sense of pain in the precordium. The angina of tobacco poisoning is entirely relieved and commonly does not recur if the use of tobacco is given up. One attack appears to sensitize to others. This sensitization seems to disappear very slowly, and so far as can be deter-

mined, is due to a coronary claudication, entirely or almost free from vagus effect.

There is no clinical nor experimental evidence that disease of the heart muscle is caused by tobacco, save for possible changes in the papillary muscles, probably explainable on a mechanical basis. The fact that all symptoms disappear when tobacco is discontinued, seems to confirm this statement.

There is neither clinical nor anatomical evidence sufficient to indicate that true coronary sclerosis may be caused by tobacco, though it is highly probable that when this condition exists, the symptoms are accentuated by it.

Tobacco angina is promptly relieved by discontinuance of tobacco; no such results are to be obtained in true angina pectoris.

It is probably unwise to permit the use of tobacco in circulatory diseases when symptoms of cardiac embarrassment occur.

The persistent use of tobacco immunizes against vagus effects and sensitizes to coronary claudication.

Death may result from tobacco angina, but it is probably very rare and most likely to occur only when anatomically diseased coronary vessels pre-exist.

The essential treatment of tobacco poisoning is suspension of the use of the weed.—*Amer. Medicine.*

CANCER IN THE FAMILY.—Perhaps nothing causes more needless worry than the fact that one or more persons in a given family have died from cancer. This is commonly taken as proof that the disease is hereditary. This does not at all follow. There is probably no greater chance of inheriting cancer than there is of being killed by lightning or of breaking one's neck falling down stairs. Perhaps there are people who worry even about those contingencies but the statisticians have shown that such fatal accidents are extremely rare. People who are concerned because their relatives have succumbed to cancer fail to consider how widespread the disease is. A malady that causes one death out of every eight among women and one out of every fourteen among men over forty is fairly common. On this basis it does not take much arithmetic to figure out how likely it is that cancer will occur many times in some families. The eminent statisticians, King and Newsholme, have pointed out that it does not prove heredity to show that in one family five deaths occurred from cancer. By the very frequency of the disease, and the laws of chance, such cases would be expected even if no one had ever suggested the idea of heredity. It can be mathematically demonstrated that if a sufficient number of people start to toss coins it is a certainty that at least one of them will toss 1,000 consecutive "heads." So with cancer; given a sufficient number of families it is certain that many members of some few families will die of this disease. Therefore it is not necessary to assume that the disease is inherited to account for its frequency. Sometimes this fallacy crops out when certain notable cases, such as the Bonaparte family, are cited. It should be remembered that the rarity of such cases of apparent heredity tends to prove the very opposite. Such cases are so noticeable that they are remembered. If the cancer tendency should disappear in such a family no fur-

ther attention would be paid to the supposed danger. If such family histories resulted from actually inheriting the disease, rather than from chance, they would be far more commonly reported. It is possible that certain forms of malignant disease may, under rare conditions, be transmitted to the child. Cancer is a very large word, covering a number of widely different diseases. It may be, also, that under highly artificial conditions of inbreeding mice a certain susceptibility to tumors may be inherited. Nevertheless, as applied to human beings and in the practical view, the foremost authorities believe that heredity in cancer may be regarded as a negligible factor.—*Jour. A. M. A., March 27, 1915.*

RHEUMATISM.—If we inquire, "What is Rheumatism?" states an editorial writer in the *Medical Press and Circular* (June 2, 1915), we may be sure of the same chilly and furtive dumbness as that which greeted Pontius Pilate when he made his famous demand for a definition of truth. The reply to such a question must take the form of the uninforming negative. We are beginning to realize what rheumatism is not; by a process of gradual exclusion we may hope some day to arrive at what it is, if indeed it be anything at all. "Si le bon Dieu n'existait point, il faudrait l'inventer" is a characteristically corroding saying of that incorrigible cynic who vainly sought to make Frederick the Great into a gentleman. If there were no generic positive to cover the agglomeration of negatives which we call rheumatism, it would be necessary to devise one. Rheumatism has nothing to do with acute rheumatism or rheumatic fever. It has nothing to do with what the French call "arthritisme," a term which, by a topsy-turvy process much better suited to the muddle-headed Briton than to the clear-headed Frenchman is used to describe all or any of the manifestations of rheumatism save only the arthritic, which are specifically excluded. Rheumatism has nothing whatever to do with uric acid, a senseless bogey badly designed by sad and salicylic herbivora to frighten the active and careless carnivora. Rheumatism has nothing to do with chorea, tonsillitis, subcutaneous nodules or erythema nodosum, all of which are said to have a real, but hitherto unexplained relationship to acute rheumatism. It may be that the only connection between them is the sinister power common to them all, of giving rise to endocarditis, a relationship which is not real, but apparent only. The power of producing a vicious cretin is common to many women who are unrelated to one another.

The word rheumatism is derived from a Greek root meaning "to flow." Shakespeare, and the writers of his time, always used it in the sense of a flux: "You that did void your rheum upon my beard." The older pathologists distinguished rheuma into three species: that of the chest, catarrhus; that of the fauces, bronchus; and that of the nostrils, coryza. Here, indeed, is terminological muddle, through which it is quite impossible to discern the path by which the name first became concentrated on the joints, and thence passed via the muscles and the nerves to anything which was obscure and accompanied by pain. It will now never be divorced from the joints, for by a consensus of expert opinion "acute rheumatism" or "rheumatic fever" is so well established as to make a change impossible, even were it desirable. Dr. W. G. Grace, when asked why a particular kind of ball, the one which pitches on the batsman's "block" was called a "yorker,"

replied, "Well, what else could you call it?" The same may be said of rheumatic fever; for though it would be easy to the pedant to suggest a more scientific name, the net result of his exercise would be to increase the existing chaos.

But we are advancing. Muscular rheumatism is developing into myalgia, tendinous rheumatism is now fibrositis, and obscure pains have become "neuritis." "Neuralgia" is no longer in favor; the common people have it. Even the "rheumatoids" do not advance in close formation; they are beginning to be discreet. Rheumatoid arthritis, formerly rheumatic gout, has ceased to be a disease; it is merely a symptom-complex, which owns causes so dissimilar as tuberculosis and oral sepsis.

The term "rheumatic gout" suggests that there is a difference between rheumatism and gout. Between acute rheumatism and gout, it is all difference; but between rheumatism of the vulgar sort and gout there is, we humbly suggest, no real difference. Save and except acute rheumatism and rheumatoid arthritis, all the tribes of rheumatism are in reality forms of gout. What, then, is gout? The term itself is derived from the French *goutte*—a drop; Latin, *gutta*; suggesting the idea of the dropping of a morbid material from the blood in, and around the joints. If the idea of dropping of morbid material be not restricted to the joints, the term is a good one. The drops may fall upon the muscles, the tendons and the nerves; they may even fall upon the eyes to blear them, and insinuate themselves through the skin to pimple it. Nothing, indeed, is sacred to these drops, not even the testicle. What we know of gout was taught us by Sydenham (1624-1689). In 1683, he published his "*Tractus de Podagra et Hydrops*," and until quite recently nothing of importance has been added to our knowledge since his time. "The more closely I have thought upon gout, the more I have referred it to indigestion or to the impaired concoctions of matters, both in the parts and the juices of the body." Thus spake the Master, and to-day we can do no better than paraphrase his saying by announcing that gout is due to "a voice of metabolism," a truly illuminating pronouncement, quite worthy of the nineteenth-century physicians who studied vitality in a test-tube. But the real kernel of Sydenham's classical and immortal description has been overlooked. "Add to this," he says, "that great eaters are liable to gout, and of these the costive more especially." Here we have revealed to us the origin of those "drops of morbid material" which are at once so ubiquitous and so unsettling. "The costive more especially" points unmistakably to the seat of the vice of metabolism, which, in the light of these words, is a vice not so much of metabolism as of excretion. Nothing more liberally contributes to "the impaired concoctions of matters" than the undischarged bankruptcy of the colon; nothing more surely distills the drops of morbid material than the "vast mass of humours" engendered by intestinal stasis.

There have been two writers upon gout—Sydenham and Arbuthnot Lane. That the latter did not realize that he was more than half solving a problem which had baffled investigators for 200 years, detracts nothing from the value of his contribution. Some day there will arise a third writer who will still further clarify this jelly. And this he will do by means of an internal secretion. To induce him to emerge from his present obscurity we offer him the following considerations. Gout is seldom seen

before puberty; in woman during her reproductive period it is very rare; and the smug and sibilant castrate is as little liable to beget tophi as he is to beget children.

POSTURE.—In an interesting study on "The Influence of Posture on Digestion in Infancy," with the aid of Roentgenography, Chas. H. Smith, M.D., and Leon T. De Wald, M.D., found that the infant's stomach is not vertical in position and that there is a certain amount of gas in the stomach of every individual and that posture has an important bearing on digestion in infancy.

They close with the following conclusions:

Air is swallowed with the food by many if not by all infants.

The erect posture favors eructation of this air; the horizontal posture prevents it.

The horizontal posture, by preventing eructation, is an important cause of vomiting, colic, indigestion and disturbed sleep.

The following routine should be followed in feeding every infant:

Before feeding the infant should be held upright to allow the escape of any gas present in the stomach.

Immediately after feeding the infant should be again held up against the shoulder of the mother or nurse. He may be patted on the back or gentle pressure may be made on the epigastrium to encourage eructation of the swallowed air.

It may be necessary to interrupt the feeding one or more times to hold the child upright to eructate, in cases in which an excessive amount of air is swallowed.

After the gas is eructated the child should be put down to sleep, preferably in the prone position and with the head of the bed raised.

If restless he may be taken up after a short time to see if there is more air in the stomach.

Habitual tongue-suckers need to be held up several times between feedings, as they constantly swallow air. Other suckling habits must be prevented by mechanical restraint.

Feedings should be given at as long intervals as possible, depending on the gastric capacity and the total daily requirements.

A feeding should not be taken too slowly. From five to ten minutes are enough as a rule; fifteen minutes should be the maximum time at bottle or breast.

The importance of posture and the wrong teaching given to physicians and nurses in the past warrant the emphasis laid on so simple a matter.—*American Journal of Diseases of Children*, April, 1915.

IN a study of the nutritive value of some proprietary infant foods (Mellin's food and Eskay's albuminized food) as milk modifiers, published in the *Amer. Jour. of Diseases of Children*, Ruth Wheeler, Ph.D., Urbana, Ill., found that—

Mixtures of milk and Eskay's Albuminized Food sustain normal growth in albino mice provided the milk furnishes 94 per cent. of the mixture as fed (66 per cent. of solid nutrients).

The lack of growth on Eskay's Food without milk appears to be due

to two factors: (1) inadequacy of the proteins to satisfy the nutritive requirements for growth in mice, and (2) absence from this preparation of some accessory substance or substances essential to growth.

Eskey's Food in milk mixtures, as when fed without milk, produces in mice soft stools and sometimes diarrhea.

Mixtures of Mellin's Food and milk also sustain normal growth in mice. Here, too, the milk serves two purposes: to supplement inadequate proteins and to supply essential accessory food substances.

A mixture of 93 per cent. Mellin's Food and 7 per cent. purified casein is adequate for long-continued maintenance, but not for growth; 2 c.c. of milk added to the daily ration (4 gm.) of this mixture, makes a food which sustains entirely normal growth in mice. Here, milk furnishes 5.8 per cent. (including casein, 7.2 per cent.) of the total solids of the diet.

The feces of animals on a diet of Mellin's Food mixtures were always comparatively hard and dry.

A mixture of fresh milk and 6.5 per cent. sucrose also sustained entirely normal growth in young mice. From an economic standpoint at least, this fact deserves consideration.

INFANT FEEDING WITH TOP-MILK.—J. Milton Mabbott. (*Medical Record*, December 19, 1914, p. 1043). The author uses the top five ounces of milk from the ordinary quart bottle as delivered in New York City. This approximates from 12 to 16 per cent. of fat, practically the same as gravity cream of the same percentage. He starts at the age of one week with five ounces of this top-milk and 10 ounces of water and increases the amount of food once a week by adding an extra ounce of top-milk and an extra ounce of water to the daily quantity. At the sixth week he reaches 10 ounces and 15 ounces respectively. This amount of water includes the lime water used, if any. After the seventh week the quantity of water remains stationary. The quantity and strength of the food is increased by going deeper into the bottle each week for an extra ounce of milk. At three months the quantity of top-milk remains stationary; and hereafter, until the baby reaches the age of twenty weeks, the food allowance is increased weekly by adding one ounce of whole milk to the quantity used. Beyond six months the quantity of food remains the same, the whole milk being increased and the water reduced in equal amounts. Thus at seven and a half months the food will consist of one pint of top-milk, a pint and a half of whole milk and a half pint of water. Eventually the top-milk is replaced by whole milk. The author considers the baby's size, weight and digestion as well as its age, and feeds each case as an individual and not by his chart alone.—*Archives of Pediatrics*.

THE CLASSIFICATION AND DIAGNOSIS OF DIARRHEA IN BOTTLE-FED INFANTS.—The *Boston Medical and Surgical Journal* of March 4, 1915, in an editorial note, recalls the fact that Morse gave in the *American Journal of the Medical Sciences* for January an admirable exposition of the various forms of infectious diarrhea. He divides the micro-organisms which are its primary cause into three main classes: the dysentery bacillus in all its forms, the gas bacillus and similar organisms, and thirdly, other organisms, of which the most important are streptococci, the colon bacillus, and the

pyocyaneus. It is impossible to determine from the symptoms what form of organism is the cause of the disease, and there is nothing about the stools which will aid in the differentiation except, in rare instances, the peculiar green color caused by the bacillus pyocyaneus, and also in cases in which the streptococcus is the cause. In the former instance the green color will disappear on the addition of nitric acid, and in the latter the streptococcus, which is usually present in large numbers, can be easily recognized by the microscope.

Morse describes a simple method by which the presence or absence of the gas bacillus may be determined in from eighteen to twenty-four hours, but very properly adds the caution that in interpreting the results of the test it should be borne in mind that the presence of a few gas bacilli does not necessarily prove that they are the cause of the disease. While it is not usually difficult to differentiate between the two, the only condition with which a typical case of infectious diarrhea is likely to be confused is intussusception, although when the temperature is high and the symptoms of cerebral irritation are marked and develop before the appearance of the characteristic stools of mucus and blood, the affection may be mistaken for some form of meningitis. Here, if from the symptoms and physical signs the diagnosis is not plain, a lumbar puncture will settle it at once. In mild cases of infectious diarrhea, however, it is not infrequently difficult, if not impossible, to distinguish between this and indigestion with fermentation, and in the diagnosis the most important single symptom is no doubt the temperature curve; for while in indigestion with fermentation the elevation of the temperature is either very slight or high, but of short duration, in infectious diarrhea, although usually not very high, it is constant and continuous. In many instances a positive diagnosis can be made only by means of a bacteriological examination of the stools, and as regards the presence or absence of dysentery bacilli, there is unfortunately no method for determining this which does not require special media and a fairly well-equipped laboratory. Infectious diarrhea in infancy is always a serious disease, and the prognosis should, therefore, always be a guarded one.

It can readily be understood how the two forms, infectious diarrhea and intestinal indigestion, may overlap each other, as a baby with any form of indigestion is naturally more susceptible to an infection. Intestinal indigestion, however, constitutes by far the largest class of infantile diarrheas, and it is met with more constantly at all seasons than the other, which is more often seen in hot weather. The subdivisions under intestinal indigestion adopted by Dennett are made upon the practical basis of the foods previously administered, though if properly interpreted, he maintains, these have a scientific basis too. Simple intestinal indigestion is caused by feeding mixtures containing more fat, sugar, proteid or starch than the infant is capable of digesting, or by feeding these elements in a form which cannot be digested, and most infants with a diarrhea due to such trouble have a combination of fat, sugar and proteid indigestion which perhaps was originally occasioned by one of these constituents only. Indigestion caused by fat is usually due to the use of top-milks or cream, although such feedings by no means necessarily cause indigestion in all infants. Sugar indigestion is caused, of course, by giving too much sugar, and gruels when given in milk and sugar mixtures are undoubtedly a con-

tributing factor in the causation of diarrhea in very young infants. Underfeeding includes all those cases in which sufficient food has not been given to make the infant gain, and many of these babies have a more or less severe grade of intestinal indigestion, while their "tolerance" (ability to digest and assimilate food) has been gradually reduced during the time this has lasted. Overfeeding is apt to be easier to treat if it occurs in a well-nourished child. The diagnosis of simple intestinal indigestion is not difficult. The onset is gradual and there is no fever. While the stools may vary greatly in color and consistency their odor is generally normal. There is no blood, unless this should be due to some local condition in rectum or anus, and mucus is practically always present.

The fermentative type of diarrhea is caused and aggravated by the intestinal bacteria which feed upon carbohydrates, and putrefactive diarrhea by those which feed upon protein, and the former is far more common because of the universal custom of giving a large amount of sugar to bottle-fed infants. It is easy to distinguish either of these from simple indigestion by the fact that a low grade of fever (usually from 99° to 102° F.) is present in the fermentative and putrefactive types. Much more difficulty is found in differentiating between the fermentative and the putrefactive type, a bacteriological examination of the stools not being practicable for the general practitioner. Apart from the stools, there are two main points of distinction: First, the fermentative form almost always occurs in the infant who has been fed a high sugar or starch diet, while the putrefactive is met with in infants who have been given strong milk mixtures with little or no starch in them, or in older children who are fed on a mixed diet. The second means of distinguishing between the two is the therapeutic test. A fermentative diarrhea will respond readily to a mixture made up of one third milk and two thirds water, the two being boiled together without sugar. In putrefactive diarrhea this treatment will be of no service, but the condition will yield to a starch diet, consisting of a thick gruel. When employing the therapeutic test Dennett states that it is usually better to give a boiled milk mixture to infants under five or six months and the gruels to those over that age, since younger infants are more liable to fermentative diarrhea and older ones to the putrefactive form. The sour odor of the stools in fermentative diarrhea is very characteristic, and the foul odor of putrefactive diarrhea (resembling that of decayed meat) is also very helpful in the differential diagnosis. Again, the reaction of the stools in fermentative diarrhea is always acid, and the acidity usually occasions inflamed buttocks and chafing, while in putrefactive diarrhea it is always alkaline, and the skin is not apt to be irritated.

GOITRE IN RELATION TO PREGNANCY.—Muller (Berne, Switzerland), who has studied the relationship of goitre to pregnancy in the Canton of Berne, concludes there is a definite predisposition in the female sex to diseases of the thyroid gland; and the cause is probably to be sought in some influences originating in the female genitalia. In the locality above named, where goitre is endemic, about seven per cent. of the cases develop at the time of puberty. In ten per cent. of all women, a swelling of the neck occurs at the time of the menstrual period, which in some instances leads to a permanent goitre. But the main causes of the predominance of goitre

in women are found in association with pregnancy. It is rare to find a normal thyroid in a pregnant woman residing in a goitre region; primiparae have a slight swelling of the thyroid, where multiparae have parenchymatous nodular or vascular goitres. The more frequently pregnancy occurs, the greater is the tendency to goitre disease, especially nodular and cystic degeneration. In 57 per cent. of cases the thyroid swelling of pregnancy disappears in the puerperium. This is especially true in vascular straua. The parenchymatous and nodular forms also display a tendency to retrogression. In seven per cent. the swelling advances without influence from the puerperium and the processes of childbirth seem to furnish the impetus to permanent thyroid disease. Functional disturbances of the heart are rare in pregnancy. If the heart is normal it is not affected in pregnancy by the thyroid gland. Endemic goitre causes the generally contracted pelvis so common in Berne by inducing cretinism.—*Zeitschr. f. G. u. G.* Vol. 75 to 264.

THEODORE J. GRAMM, M.D.

THE COAGULABILITY OF THE BLOOD IN PREGNANCY.—(Berne, Switzerland). Hofman says, in hyperthyroidism the coagulability of the blood has been found to be delayed, in hypothyroidism it is accelerated. In the former condition the coagula are few, while in the latter they are increased. These considerations led the author to examine whether in pregnancy the thyroid has an influence upon the coagulability of the blood. His studies showed that metabolism is not affected in pregnancy as occurs in hyperthyroidism. The thyroid may become increased in size without the coagulability of the blood being delayed. The morphological blood picture is but slightly affected, and the same is true of the molecular concentration of the blood. The thyroid function in pregnancy has no pronounced influence upon metabolism.—*Zeitscher. f. G. u. G.* Vol. 75-246.

THEODORE J. GRAMM, M.D.

PITUITRIN IN OBSTETRICS.—Sachs (Königsberg) has studied the action of pituitrin in the light of the experiences of three years since its introduction. He summarizes the indications as follows: 1. Weakness of the uterine contractions; 2. in all cases where it becomes necessary to hasten delivery, to which must be counted cases where the presenting part must be rapidly advanced into the pelvis as after reposition of the prolapsed cord or small parts, also in placenta praevia after rupture of the membranes; likewise cases of fever demanding prompt delivery. 3. Moderately contracted pelvis where spontaneous delivery is possible. 4. Irregular engagement requiring stronger contractions. 5. To augment or substitute the aid of the abdominal muscles when there exists either diastasis or general weakness. 6. To aid in the engagement of the head when weak pains require assistance. 7. Threatened asphyxia, there being no difficulties for the soft parts. 8. The placental stage may be aided both for loosening and expelling the placenta; and later firm contractions of the uterus may be induced. Transverse or irregular presentations are contraindications; and the preparation must never be used without internal examination; neither must it be used in cases of greatly increased blood pressure, when uterine rupture threatens and in primiparae with excessive rigidity.—*Monatsschr. f. Geb. u. Gyn.* Vol. 40—544.

THEODORE J. GRAMM, M.D.

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FIFTY-SECOND SESSION

ON THE EFFECT OF DRUGS ON BACTERIAL GROWTH.
AN EXPERIMENTAL STUDY.

BY

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OUTLINE.

1. Object.
2. Drugs and Bacteria employed.
3. Technic.
4. Analysis of results.
5. Summary.

The *object* of this study was to observe the effect of a variety of drugs on the growth of bacteria in vitro. The stimulus for the work was furnished by Churchman's ¹ report on the remarkable inhibitive and differential effect on bacteria of gentian violet when added in minute quantities to ordinary bacteriologic test-tube media. Churchman found that a dilution of gentian violet in culture media in the proportion of 1 to 100,000 was sufficient to check the growth of certain micro-organisms while allowing the multiplication of others. It was thought possible that certain drugs might have selective or peculiar affinities in relation to bacterial growth, and the working out of the problem constitutes this study.

¹ Churchman J. W.: Jour. Exper. Med., 1912, xvi, 221.

The *drugs and bacteria employed* were:

DRUGS.	BACTERIA.
Acidum carbolicum	B. typhosus
Aluminium metallicum	B. paratyphosus A
Antimonium crudum	B. paratyphosus B
Arsenicum album	B. coli
Arsenicum iodatum	Spirillum cholerae
Aurum metallicum	B. diphtheriae
Baptisia tinctoria	Staphylococcus pyogenes aureus
Belladonna	Streptococcus pyogenes
Brucinae sulphas	B. anthracis
Bryonia alba	
Cinchona officinalis	
Cuprum arsenicosum	
Cuprum metallicum	
Cuprum sulphuricum	
Digitalis purpurea	
Echinacea angustifolia	
Gelsemium sempervirens	
Hepar sulphuris calcareum	
Hydrastinae sulphas	
Ignatia amara	
Kali bichromicum	
Lycopodium clavatum	
Natrum phosphoricum	
Nux vomica	
Plumbum metallicum	
Sepia	
Silicea	
Spartinae sulphas	
Strychninae sulphas	
Tartarus emeticus	
Thuja occidentalis	

The drugs tested numbered 31, of which 15 were vegetable, 1 animal, and 15 mineral. In the vegetable list were baptisia, belladonna, bryonia, cinchona, digitalis, echinacea, gelsemium, ignatia, lycopodium, nux vomica, thuja and four alkaloids, brucine, hydrastin, spartine and strychnia. Of the animal drugs, sepia alone was used. We attempted to employ cantharis, but were unable to do so on account of the persistent

contamination of the culture media. It seemed the fly contained spores which could not be destroyed by ordinary means. Of the minerals, we tested the metals aluminium, antimony, arsenic, aurum, cuprum and plumbum; the metallic salts arsenicum iodatum, cuprum arsenicosum, cuprum sulphate, hepar sulph., kali bichromicum, natrum phosphoricum, tartar emetic; and also carbolic acid and silicea. Carbolic acid was simply used for comparison with the other drugs and not for observations on its own effects, for these have been worked out thoroughly by many others. Attempts to test mercurius sublimatus corrosivus by this method were unsatisfactory as the albuminates of mercury formed were filtered out, annulling all drug effect.

The bacteria tested numbered 9 as tabulated above. To control results and determine particular points, more than one strain of each group were frequently cultured. Thus, in one drug test, ten different strains of typhoid bacilli were used. In another, five strains of staphylococci and four of streptococci were grown.

The *technic* of procedure was as follows: The pharmacist * prepared as strong a solution of the drug as possible up to 10% in distilled water. In general, these preparations were then made up in various strengths, such as 5, 1, .1, .01, .001% and higher, in ordinary nutrient agar and put up in the usual slant form in tubes. We were only able to use one drug in 10% strength, this amount usually rendering the agar too soft. Some of the metals were soluble with great difficulty, for example, cuprum metallicum and aurum metallicum in which the strongest preparations were but .01% or 1 to 10,000. The drug strength indicated in the tables is the exact percentage of that particular substance in the culture medium and not the fraction of the stock solution. The strength at which the drug first appears in the tables is usually the greatest which could be prepared in agar. It is then recorded in progressively higher dilutions and its disappearance from the table means that beyond the highest tabular dilution, it had no effect on bacterial growth. The preparation of the various solutions and their introduction in agar media involved the exposure of the drugs to 100 C., but the necessity of having the culture

*We are much indebted to the coöperation and advice of Dr. Bornemann, who made all the drug preparations for us and assisted us with many valuable suggestions.

media primarily sterile rendered this unavoidable. The plants were used fresh whenever possible and a number of infusions required repeated attempts before satisfactory preparations could be obtained. No preservatives of any kind were added.

One drug was tested at a time. Each variety of bacteria was cultured on all dilutions of the drug, and, as can be seen from the tables, more than one strain of a particular organism were frequently employed. In addition, a control culture of each bacterium was grown on plain agar. All tubes were incubated at 37 C. for 24 hours, examined and recorded, and grown for a further 24 hours. Final examinations were then made and if the results differed essentially from the 24 hour growth, this was noted. The presence and degree of growth were determined macroscopically only. The ratings were gauged by comparison with the control tube.

The appended tables show the results obtained. The method of record is very simple. For purposes of ready reference, all drugs are arranged in the tables in alphabetical order and with entire disregard of pharmacological relations. The heading of the table is the drug tested. Under it are listed the organisms cultured, the dilutions used up to the disappearance of effects, and the results obtained. The normal growth to be expected of any particular bacterium on plain agar for the time incubated is indicated by 4 +, as shown in the control tube record at the head of each table. All figures below 4 + are proportionate diminutions in growth down to "O," which indicates no growth at all. Records of 5 + and above indicate a stimulation of bacterial growth above normal. Where a drug exhibited real or apparent effect on bacterial growth, the experiment was repeated for confirmation, and, indeed, amplified by the addition of other strains of bacteria. Thus, the tests on arsenicum album were carried out three times. And echinacea and hepar sulph. were tried with various staphylococci and streptococci. For the sake of space, however, the results were condensed into one table for each drug.

In the *analysis of results*, it was found there was a marked difference between the action of the vegetable and mineral drugs. We considered a drug possessing any worthy power of bacterial inhibition should be able to act in a strength of .1% or 1 to 1,000. On this basis the vegetable drugs as a whole were quite disappointing in their effects and largely negative. Drugs like baptisia, belladonna, bryonia, cinchona,

ignatia, nux vomica, thuja, etc., from which we hoped to obtain some results, had practically no effect on bacterial growth in .1% strength and, for the most part, none even in 1% strength. It is noteworthy that a powerful alkaloid like strychnia had little or no effect in .1% dilution with the exception of the checking of diphtheria and this disappeared at .01%. Indeed, with a single exception, it may be said that the 15 vegetable drugs tested according to the method outlined had no inhibitive, stimulative or specific effect on bacterial growth. The exception referred to, hydrastin, is discussed below.

The only animal drug used, sepia, was without any effect in any dilutions.

Among the mineral drugs, many more were active in relation to bacteria than in the vegetable group. Some had little or no inhibitive or other power, namely, aluminium, antimonium crudum, aurum metallicum, hepar sulph. natrum phosphoricum and silicea. Others showed some inhibition in .1% and .01% but not higher. These were arsenicum iodatum, cuprum metallicum, cuprum sulphuricum, kali bichromicum, plumbum metallicum and tartar emeticus. The action was not specific but more or less generally inhibitive in the strengths mentioned. By far the most distinctive results of the research were obtained with arsenicum album and its salt cuprum arsenicosum. In .001% or dilutions of 1 to 100,000 these drugs quite effectually checked the growth of most of the bacteria and various strains employed in the test. In .1% strength of 1 to 1,000, the inhibition of arsenicum album is complete, not one bacterium of the entire list showing growth. At .01% or 1 to 10,000 only one organism out of fourteen grew and this, the staphylococcus, feebly. At .001% or 1 to 100,000, eleven out of fourteen organisms failed to grow. The effect of cuprum arsenicosum is quite similar and very probably its efficiency is due to the arsenic content, judging by the independent effects of copper and arsenic.

We were rather disappointed in finding no distinctly specific or selective action of any drug. Arsenicum album and cuprum arsenicosum while acting in very dilute solution could not be said to act specifically. They seemed to have almost equal effect on entirely unrelated bacteria. We tested separately for the specific action of echinacea and hepar sulph on various strains of staphylococci. The results were nega-

tive, echinacea having very little effect even up to 10% and hepar none whatever. The nearest thing to specific action was on the negative side in the case of hydrastin, the effects of which are mildly interesting. In repeated tests, it was shown that while hydrastin in .1% strength had no effect at all on the typhoid-colon group of bacteria, it rather effectually checked the growth of other organisms.

In regard to the relation of drug strength to the inhibition of bacterial growth, we found the greater the strength of the drug, the more marked the bacterial restraint. In no instance was there greater checking of bacterial vitality by a higher dilution of a drug than a lower one of the same agent. The tables show again and again the progressive increase of bacterial growth as the drug becomes more dilute. And while it is not indicated in the tables, it should be noted that the tests were carried into still higher dilutions of drug without any effect. That is to say, after the drug dilution reached a stage where the bacterium grew at its normal 4 + standard, further dilutions neither increased or decreased the culture.

Finally, we would remind the reader that this study is purely experimental and consists simply of our observations on the effects of drugs, prepared according to a stated method, on bacterial growth in vitro. It is not to be assumed that these results apply to the action of drugs in vivo. It is well known that an effect in vitro is not interpretative of one in vivo. The conditions are utterly different and the results often likewise. We recognize too that this method of preparing drugs in culture media may have, through the exposure to high temperatures, destroyed certain important, specific principles, notably in the vegetable drugs. This was anticipated but unfortunately could not be avoided if sterile media were to be obtained. With the very highest or infinitesimal dilutions, it is possible the drug effect might have returned. This may or may not be; we did not test it. An objection may obtain that the action of drugs given to human beings for therapeutic purposes is usually not intended to be bactericidal, but dynamic, increasing the opsonic index and general resistance. This is true, but our study has nothing to do primarily with the action of drugs on human beings; nor do we even intend to suggest that there is a relation between this research as carried out and the action of drugs as ordinarily administered. The whole object and end of our inquiry was to see if drugs in the test tube in vari-

ous dilutions had any general or specific effect on various bacteria.

SUMMARY.

The present study consists of observations on the effects on various bacteria of 31 drugs in various dilutions in test-tubes of nutrient agar. The results with 1 animal and 15 vegetable drugs were largely negative. Of 15 mineral drugs, some showed inhibitive effects in a dilution of 1 to 10,000. But the most notable results were obtained with arsenic and arsenite of copper which, in dilutions of 1 to 100,000, exhibited distinct, though not specific, checking of bacterial growth. Specific effects of special drugs on certain organisms were sought for but were lacking, though it was noted that hydrastin in a dilution of 1 to 1,000 had no effect on the typhoid-colon group while inhibiting other bacteria. The stronger preparations of drug were always more active than the weaker ones.

ACIDUM CARBOLICUM

ORGANISM	Control	.0001%	.001%	.01%	.1%
Typhoid, "C"	4 +	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +	4 +
Typhoid, "N"	4 +	4 +	4 +	4 +	4 +
Typhoid, "Na"	4 +	4 +	4 +	4 +	4 +
Typhoid, "M"	4 +	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +	4 +
Para A, "B"	4 +	4 +	4 +	4 +	4 +
Para B	4 +	4 +	4 +	4 +	4 +
Para B, "R"	4 +	4 +	4 +	4 +	4 +
Colon, "WS"	4 +	4 +	4 +	4 +	4 +
Colon, "R"	4 +	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	4 +	4 +
Staphylococcus, "P"	4 +	4 +	4 +	4 +	4 +
Staphylococcus, "H"	4 +	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +	4 +
Anthrax	4 +	4 +	4 +	4 +	0 +

% = Drug strength in medium. 4+ = Normal growth. 0 = No growth.

ALUMINIUM METALLICUM

ORGANISM	Control	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	2 +
Para A, "Y"	4 +	4 +	4 +	3 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	3 +	3 +	2 +
Diphtheria, "C"	4 +	4 +	4 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	0
Anthrax	4 +	4 +	4 +	2 +

ANTIMONIUM CRUDUM

ORGANISM	Control	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	1 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	3 +
Diphtheria, "C"	4 +	4 +	2 +	1 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +
Anthrax	4 +	4 +	4 +	1 +

‰=Drug strength in medium. 4+=Normal growth. 0=No growth.

ARSENICUM ALBUM

ORGANISM	Control	.000001%	.00001%	.0001%	.001%	.01%	.1%
Typhoid, "C" . . .	4 +	4 +	4 +	1 +	0	0	0
Typhoid, "K" . . .	4 +	4 +	4 +	3 +	0	0	0
Typhoid, "N" . . .	4 +	4 +	4 +	2 +	0	0	0
Typhoid, "Na" . . .	4 +	4 +	4 +	1 +	0	0	0
Para A, "Y" . . .	4 +	4 +	4 +	1 +	0	0	0
Para A, "B" . . .	4 +	4 +	4 +	4 +	0	0	0
Para B	4 +	4 +	4 +	4 +	1 +	0	0
Para B, "R" . . .	4 +	4 +	4 +	3 +	0	0	0
Colon, "W.S" . . .	4 +	4 +	4 +	2 +	0	0	0
Cholera	4 +	4 +	4 +	4 +	0	0	0
Diphtheria, "C" . . .	4 +	4 +	4 +	2 +	0	0	0
Staphylococcus, "S" .	4 +	4 +	4 +	4 +	3 +	2 +	0
Streptococcus, "S" .	4 +	4 +	4 +	3 +	0	0	0
Anthrax	4 +	4 +	4 +	4 +	2 +	0	0

ARSENICUM IODATUM

ORGANISM	Control	.01%	.1%
Typhoid, "C"	4 +	1 +	1 +
Typhoid, "K"	4 +	1 +	0
Para A, "Y"	4 +	1 +	0
Colon, "W.S"	4 +	1 +	0
Cholera	4 +	0	0
Diphtheria, "C"	4 +	2 +	1 +
Staphylococcus, "S"	4 +	4 +	1 +
Streptococcus, "S"	4 +	1 +	0
Anthrax	4 +	1 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

AURUM METALLICUM

ORGANISM	Control	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	3 +
Diphtheria, "C"	4 +	3 +	2 +	1 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	3 +
Anthrax	4 +	4 +	4 +	2 +

BAPTISIA TINCTORIA

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	1 +
Typhoid, "K"	4 +	4 +	4 +	2 +
Para A, "Y"	4 +	4 +	4 +	0
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	0
Diphtheria, "C"	4 +	4 +	5 +	5 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	0
Anthrax	4 +	4 +	4 +	1 +

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

BELLADONNA

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	3 +
Typhoid, "K"	4 +	4 +	4 +	2 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	3 +
Cholera	4 +	4 +	1 +	0
Diphtheria, "C"	4 +	4 +	4 +	4 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	1 +
Anthrax	4 +	4 +	2 +	0

BRUCINAE SULPHAS

ORGANISM	Control	.01%	.1%	1%
Typhoid, "C"	4 +	4 +	4 +	2 +
Typhoid, "K"	4 +	4 +	4 +	1 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	1 +	0
Diphtheria, "C"	4 +	4 +	4 +	0
Staphylococcus, "S"	4 +	4 +	4 +	3 +
Streptococcus, "S"	4 +	4 +	4 +	0
Anthrax	4 +	4 +	4 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

BRYONIA ALBA

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	3 +
Typhoid, "K"	4 +	4 +	4 +	3 +
Para A, "Y"	4 +	4 +	4 +	2 +
Colon, "W.S"	4 +	4 +	4 +	5 +
Cholera	4 +	4 +	4 +	1 +
Diphtheria, "C"	4 +	4 +	4 +	5 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	3 +
Anthrax	4 +	4 +	4 +	4 +

CINCHONA OFFICINALIS

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	2 +
Typhoid, "K"	4 +	4 +	4 +	1 +
Para A, "Y"	4 +	4 +	2 +	1 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	3 +	1 +
Diphtheria, "C"	4 +	4 +	3 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	3 +	2 +	1 +
Anthrax	4 +	4 +	2 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth

CUPRUM ARSENICOSUM

ORGANISM	Control	.0000001%	.000001%	.00001%	.0001%	.001%	.01%
Typhoid, "C" . . .	4 +	4 +	4 +	4 +	4 +	1 +	0
Typhoid, "K" . . .	4 +	4 +	4 +	4 +	4 +	0	0
Typhoid, "N" . . .	4 +	4 +	4 +	4 +	4 +	1 +	0
Typhoid, "Mon" . . .	4 +	4 +	4 +	4 +	4 +	0	0
Typhoid, "W" . . .	4 +	4 +	4 +	4 +	4 +	1 +	
Typhoid, "Na" . . .	4 +	4 +	4 +	4 +	4 +	0	
Typhoid, "Ftpk" . . .	4 +	4 +	4 +	4 +	4 +	0	
Typhoid, "Ma" . . .	4 +	4 +	4 +	4 +	4 +	0	
Typhoid, "F" . . .	4 +	4 +	4 +	4 +	4 +	0	
Typhoid, "Mw" . . .	4 +	4 +	4 +	4 +	4 +	0	
Para A, "B" . . .	4 +	4 +	4 +	4 +	4 +	0	0
Para A, "S" . . .	4 +	4 +	4 +	4 +	4 +	0	0
Para B	4 +	4 +	4 +	4 +	4 +	1 +	
Colon, "W.S" . . .	4 +	4 +	4 +	4 +	4 +	1 +	0
Cholera	4 +	4 +	4 +	4 +	4 +	0	0
Diphtheria, "C" . . .	4 +	4 +	4 +	4 +	4 +	0	0
Staphylococcus, "S" . .	4 +	4 +	4 +	4 +	4 +	4 +	2 +
Streptococcus, "S" . .	4 +	4 +	4 +	4 +	1 +	1 +	0
Anthrax	4 +	4 +	4 +	4 +	4 +	3 +	1 +

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

CUPRUM METALLICUM

ORGANISM	Control	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	2 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	3 +	2 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	0	0
Anthrax	4 +	4 +	4 +	0

CUPRUM SULPHURICUM

ORGANISM	Control	.001%	.01%	.1%
Typhoid, "C"	4 +	4 +	4 +	0
Typhoid, "K"	4 +	4 +	4 +	0
Para A, "Y"	4 +	4 +	4 +	0
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	0
Diphtheria, "C"	4 +	4 +	4 +	0
Staphylococcus, "S"	4 +	4 +	4 +	1 +
Streptococcus, "S"	4 +	4 +	0	0
Anthrax	4 +	4 +	4 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

DIGITALIS PURPUREAE

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	2 +
Para A, "Y"	4 +	4 +	4 +	2 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	2 +
Diphtheria, "C"	4 +	4 +	4 +	4 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	1 +
Anthrax	4 +	4 +	4 +	2 +

ECHINACEA AUGUSTIFOLIA

ORGANISM	Control	.1%	1%	5%	10%
Typhoid, "C"	4 +	4 +	4 +	1 +	
Typhoid, "K"	4 +	4 +	4 +	1 +	
Para A, "Y"	4 +	4 +	4 +	1 +	
Colon, "W.S"	4 +	4 +	4 +	4 +	
Cholera	4 +	4 +	2 +	0	
Diphtheria, "O"	4 +	4 +	4 +	4 +	
Staphylococcus, "S"	4 +	4 +	1 +	1 +	1 +
Staphylococcus, "Hd"	4 +	4 +	3 +	3 +	3 +
Staphylococcus, "Hf"	4 +	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	0	
Streptococcus, "E"	4 +	4 +	4 +	3 +	0
Streptococcus, "G"	4 +	4 +	4 +	3 +	0
Anthrax	4 +	4 +	0	0	

% = Drug strength in medium. 4+ = Normal growth. 0 = No growth.

GELSEMIUM SEMPERVIRENS

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	1 +
Typhoid, "K"	4 +	4 +	4 +	2 +
Para A, "Y"	4 +	4 +	4 +	2 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	1 +
Diphtheria, "O"	4 +	4 +	5 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	0
Anthrax	4 +	4 +	4 +	0

HEPAR SULPHURIS CALCAREUM

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Staphylococcus, "Hf"	4 +	4 +	4 +	
Staphylococcus, "Pr"	4 +	4 +	4 +	
Streptococcus, "S"	4 +	4 +	2 +	0
Anthrax	4 +	4 +	4 +	3 +

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

HYDRASTINAE SULPHAS

ORGANISM	Control	.0001%	.001%	.01%	.1%	1%
Typhoid, "C"	4 +	4 +	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +	4 +	
Typhoid, "N"	4 +	4 +	4 +	4 +	4 +	
Typhoid, "Na"	4 +	4 +	4 +	4 +	4 +	
Typhoid, "Mw"	4 +	4 +	4 +	4 +	4 +	
Typhoid, "Mon"	4 +	4 +	4 +	4 +	4 +	
Para A, "Y"	4 +	4 +	4 +	4 +	4 +	
Para A, "B"	4 +	4 +	4 +	4 +	4 +	1 +
Para B	4 +	4 +	4 +	4 +	4 +	
Para B, "R"	4 +	4 +	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +	4 +	4 +
Colon, "R"	4 +	4 +	4 +	4 +	4 +	
Cholera	4 +	4 +	4 +	4 +	0	0
Diphtheria, "C"	4 +	4 +	4 +	4 +	0	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +	0	
Staphylococcus, "Pr"	4 +	4 +	4 +	4 +	1 +	0
Staphylococcus, "H"	4 +	4 +	4 +	4 +	1 +	
Staphylococcus, "R"	4 +	4 +	4 +	4 +	0	
Staphylococcus, "Hf"	4 +	4 +	4 +	4 +	0	
Streptococcus, "S"	4 +	4 +	4 +	0	0	0
Streptococcus, "F"	4 +	4 +	4 +	1 +	0	
Streptococcus, "G"	4 +	4 +	4 +	1 +	0	
Anthrax	4 +	4 +	4 +	0	0	

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

IGNATIA AMARA

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	3 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	0
Diphtheria, "O"	4 +	4 +	4 +	1 +
Diphtheria, "C"	4 +	4 +	1 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	0
Anthrax	4 +	4 +	4 +	1 +

KALI BICHROMICUM

ORGANISM	Control	.01%	.1%	.5%	2.5%
Typhoid, "C"	4 +	4 +	1 +	0	0
Typhoid, "K"	4 +	4 +	1 +	0	0
Para A, "Y"	4 +	4 +	0	0	0
Colon, "W.S"	4 +	4 +	1 +	0	0
Cholera	4 +	4 +	0	0	0
Diphtheria, "C"	4 +	4 +	0	0	0
Staphylococcus, "S"	4 +	4 +	2 +	0	0
Streptococcus, "S"	4 +	4 +	0	0	0
Anthrax	4 +	4 +	1 +	0	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

LYCOPODIUM CLAVATUM

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "O"	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	4 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +
Anthrax	4 +	4 +	4 +	4 +

NATRUM PHOSPHORICUM

ORGANISM	Control	.01%	.1%	1%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	4 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +
Anthrax	4 +	4 +	4 +	4 +

% = Drug strength in medium. 4+ = Normal growth. 0 = No growth.

NUX VOMICA

ORGANISM	Control	.1%	1%	5%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	3 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	1 +
Anthrax	4 +	4 +	4 +	4 +

PLUMBUM METALLICUM

ORGANISM	Control	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	1 +
Typhoid, "K"	4 +	4 +	4 +	1 +
Para A, "Y"	4 +	4 +	4 +	0
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	0
Diphtheria, "C"	4 +	4 +	4 +	0
Staphylococcus, "S"	4 +	4 +	4 +	2 +
Streptococcus, "S"	4 +	4 +	4 +	1 +
Anthrax	4 +	4 +	4 +	0

% = Drug strength in medium. 4 $\frac{7}{+}$ = Normal growth. 0 = No growth.

SEPIA

ORGANISM	Control	001%	.1%	1%
Typhoid, "C"	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	4 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +
Diphtheria, "O"	4 +	4 +	4 +	4 +
Diphtheria "C"	4 +	4 +	4 +	4 +
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +
Anthrax	4 +	4 +	4 +	4 +

SILICEA

ORGANISM	Control	.00001%	.0001%	.001%	.01%
Typhoid, "C"	4 +	4 +	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +	3 +	2 +
Para A, "Y"	4 +	4 +	4 +	4 +	3 +
Colon, "W.S"	4 +	4 +	4 +	4 +	4 +
Cholera	4 +	4 +	4 +	4 +	4 +
Diphtheria, "C"	4 +	4 +	4 +	1 +	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	4 +	4 +	2 +
Anthrax	4 +	4 +	4 +	4 +	1 +

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

SPARTINAE SULPHAS

ORGANISM	Control	.1%	.5%
Typhoid, "C"	4 +	4 +	4 +
Typhoid, "K"	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	1 +
Colon, "W.S"	4 +	4 +	4 +
Cholera	4 +	4 +	2 +
Diphtheria, "C"	4 +	3 +	1 +
Staphylococcus, "S"	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	1 +
Anthrax	4 +	0	0

STRYCHNINAE SULPHAS

ORGANISM	Control	.01%	.1%	1%
Typhoid, "C"	4 +	4 +	4 +	0
Typhoid, "K"	4 +	4 +	4 +	0
Para A, "Y"	4 +	4 +	4 +	0
Colon, "W.S"	4 +	4 +	4 +	0
Cholera	4 +	4 +	4 +	0
Diphtheria, "C"	4 +	4 +	0	0
Staphylococcus, "S"	4 +	4 +	4 +	4 +
Streptococcus, "S"	4 +	4 +	3 +	0
Anthrax	4 +	4 +	2 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

TARTARUS EMETICUS

ORGANISM	Control	.1%	.5%	2.5%
Typhoid, "C"	4 +	0	0	0
Typhoid, "K"	4 +	0	0	0
Para A, "Y"	4 +	0	0	0
Colon, "W.S"	4 +	1 +	0	0
Cholera	4 +	1 +	0	0
Diphtheria, "C"	4 +	0	0	0
Staphylococcus, "S"	4 +	2 +	1 +	1 +
Streptococcus, "S"	4 +	1 +	0	0
Anthrax	4 +	0	0	0

THUJA OCCIDENTALIS

ORGANISM	Control	.1%	1%	10%
Typhoid, "C"	4 +	4 +	4 +	1 +
Typhoid, "K"	4 +	4 +	4 +	4 +
Para A, "Y"	4 +	4 +	4 +	1 +
Colon, "W.S"	4 +	4 +	4 +	4 +
Cholera *	?	?	?	?
Diphtheria, "C"	4 +	4 +	3 +	0
Staphylococcus, "S"	4 +	4 +	4 +	2 +
Streptococcus, "S"	4 +	4 +	3 +	0
Anthrax	4 +	4 +	4 +	0

%=Drug strength in medium. 4+=Normal growth. 0=No growth.

* Cultures contaminated.

FOCAL INFECTION.

BY

GILBERT J. PALEN, M.D., PHILADELPHIA.

THE existence of foci of infection, as the causative factors in many formerly vaguely understood general conditions, has been thoroughly demonstrated and is well understood. This knowledge stands today as material aid in the recognition and cure of various general conditions.

In a recent paper, written by the author and his associate, Dr. Clay,* the subject of focal infection was considered and some resume of the work done by clinicians and bacteriologists was given. I shall, during the course of this article, quote somewhat from the former paper.

Our present day knowledge of focal infection can be traced back largely to the clinical studies of acute rheumatic fever. In the early part of the nineteenth century we find that many clinicians, especially the French, made exhaustive studies of this condition. Later, in English literature, we find the clinicians recognizing the association of acute rheumatic fever with various other conditions, among which tonsillitis stands out prominently, as also chorea, endocarditis, pericarditis and arthritis.

In 1889 W. B. Cheadle recognized "the fact that the rheumatic poison is the most common exciting cause of arthritis and so with other members of the rheumatic series. * * * * "It appears then that the rheumatic virus (whatever its exact nature and by whatever physiological machinery it acts) which produces the articular inflammation, produces in like manner inflammation of the fibrous tissue, of the pericardium, endocardium and pleura and that of fascia and tendon. * * * * It effects, moreover, mucous membranes and skin and disturbs nervous centers." Again, he says: "The claim of tonsillitis to be ranked as one of the rheumatic series is, I think, well established. Tonsillitis is a common disorder, and often arises independently, but it occurs so frequently in direct and immediate association with articular rheumatism that some pathological connection cannot be doubted."

*Journal of Ophthalmology, Otology and Laryngology, July, 1915, Page 594.

We thus see that Cheadle recognized the fact that arthritis was not a disease per se but that the agent which produced this produced also endocarditis, pericarditis, myocarditis and chorea.

Following this clinical observation came Poynton and Payne, who described a diplococcus as the cause of rheumatism. Following their work, the important work and discoveries of Billings, Davis, and especially that of Rosenow who, through a special culture method, was able to isolate the organism from the joint exudate, obtaining three kinds of organisms. “* * * *” One type of organism corresponds to that found by Poynton and Payne and might be named the *micrococcus rheumaticus*. Another type corresponds to the description of Beatty and might be quite properly designated as *diplococcus rheumaticus*, the third group, which forms long chains, may be designated as *streptococcus rheumaticus*. * * * *” He furthermore found the streptococcus viridans producing especially lesions of the endocardium, while the hemolytic streptococcus attacked the joints and the micrococcus rheumaticus the skeletal muscles. Furthermore, that mixed infections of these different types would produce lesions of the endocardium, of the joints or the muscles in one patient. Rosenow further states “The place of entrance of this organism is often difficult to determine in certain cases. The association of tonsillitis when the attack comes on is nearly always mild, while in chronic infections endocarditis there is often no apparent tonsillitis. * * * *”

In Rosenow's article, on Transmutation, he shows conclusively that the streptococcus of one type can be changed into that of a different type in the focus of infection.

From the work of Rosenow we find the clinical observations of Cheadle and other excellent internists well proven and furthermore the discoveries of Rosenow have made possible, as stated before, our understanding of various heretofore vaguely understood conditions. One thing which the reading of the literature should impress us is, that, having discovered a diseased local condition, we must not at once jump to the conclusion that this is the original focus of infection, for a close reading of the literature and a careful study of one's individual cases will prove how often one may be misled. For instance the discovery of a diseased tonsil, while it may necessitate ultimately the removal of the tonsil, does not of necessity mean the clearing up of the general systemic infec-

tion, for a closer study of the case may prove the existence of an accessory cavity empyema, a pyorrhœa, a chronic suppurative otitis media, a chronic prostatitis or some other localized condition which may be the original focus, the tonsillar condition being secondary. In other words, we must be extremely careful in promising results from the removal of diseased tonsils, treatment of accessory cavities, etc., as regards the clearing up of systemic conditions and should therefore not give a definite opinion until our patient has been thoroughly examined for other possible foci. While the removal of the tonsils has cleared up many cases of systemic infection it has failed in a larger percentage, due to the fact that cases operated upon were not studied carefully enough by the clinician. The fact of the transmutation of the bacteria in the foci of infection, as pointed out by Rosenow, also impresses upon us the fact it is often difficult to determine when we are obtaining an autogenous vaccine, for the strain of the bacteria producing the systemic condition may have been changed in the foci of infection.

From the reading of the literature the oral and accessory cavities stand out prominently as foci of infection. Especially do we find the tonsils, the teeth (pyorrhœa and abscess) empyema of the accessory cavities and chronic suppurative otitis media cited in the series of cases reported.

The following cases picked from a number will illustrate:

Case No. 1. Miss J. Had suffered for a number of years from attacks of acute articular rheumatism with almost continuous sub-acute arthritis associated with this a marked mitral regurgitation. As a child, and until present time, she had had repeated attacks of tonsillitis each of these followed by exacerbations of her rheumatism. After careful examination her tonsils were looked upon as the original focus of infection and were removed by enucleation. Within a week following this her joint symptoms entirely disappeared and until present date, two years, there has been absolutely no return. The author has had other cases similar to this.

Case No. 2. Mrs. L. Chronic otorrhœa, right ear, of many years standing. Eventually labyrinthine symptoms and intracranial involvement. Radical Mastoid Operation was performed uncovering a large extra-dural abscess. The following is a quotation of her own statements concerning her previous and present conditions, it is now one year since her operation:

"During many years I had frequent headaches on the right side of my head and through the right eye, coming at irregular intervals and lately of a very severe type, and much more frequently, not being relieved by any medicinal treatment for headache, but would usually pass away in the night. I had a number of attacks of persistent nausea lasting in one instance over a period of three weeks, not yielding to ordinary remedies for the same.

Had also frequent attacks of indigestion and nervousness associated with the sensation of a lump in the throat, which lasted sometimes more than a week. There was very marked mental depression and irritability without reasonable cause, and lack of physical energy, tiring both nervously and physically under slight exertion, and car sickness was very pronounced. Of all these symptoms I feel free, have decided energy, and no attacks of indigestion or ill effects of trolley-riding."

Every otologist could cite long series of such cases proving the necessity for the clearing up of cases of chronic otorrhœa.

Case No. 3. Miss Y. Had been falling off in weight with slight fever and chilliness and sweating in repeated attacks extending over some period of time, associated also with icterus and general marked malaise.

Examination showed empyema of the right ethmoid. Thorough curettement cleared up this condition and the general condition of the patient improved greatly. It is interesting to note in this case, that a large abscess pocket was found back of the tonsil on the same side. From the clinical history we believe this was secondary to the ethmoid infection.

Case No. 4. Miss Mary C. Operated for acute mastoiditis preceded by acute tonsillitis. Pus from external canal and mastoid wound showed short chain streptococci. Entire mastoid necrosed. The case progressed favorably for five weeks when she developed intense pain with some swelling anterior to the ear in the region of the condyle of the lower jaw. Patient stated that preceding this she had had intense pain in a lower molar of the same side. I then discovered she had had this tooth treated for a long time and had had repeated attacks of pain. Also her history showed some falling off in weight, general malaise extending over a long period. Removing the temporary filling from this tooth I found pus issuing from the cavity and repeated culture of this proved the presence of the

same short chain streptococcus as had been found in the aural discharge. Removal of the tooth caused a clearing up of the local and general conditions.

Of especial interest in this case is the fact that, at the same time this patient was taken with the acute mastoiditis, her sister was attacked with acute tonsillitis followed by pneumonia arthritis and endocarditis. It is possible that the one patient infected the other and that the bacteria infecting the second patient were so changed in the tonsils, the original site of infection, as to produce lesions of entirely different character than were present in the first case.

The author has repeatedly seen these streptococcus infections pass from one member of the family to the other.

Case No. 5. Mr. C. Referred to me because of excessive pain in the left ear extending over a period of years. This pain being almost constant. Upon subjective examination I found that he had associated also an intense trifacial neuralgia over some period of time. While not complaining of any especial pain in the teeth still he had a lower molar on the same side which had been treated for some time by a dentist.

Upon objective examination of the ear I found a peculiar hard swelling at the upper posterior portion of the external auditory canal and just back of this a small opening in the drum from which a small amount of discharge could be gotten. The culture from the teeth and ear showed the same type of bacteria. The removal of the tooth cleared up entirely the facial condition and the ear returned in every way to normal.

The author has seen a great many cases of this association of teeth with aural disease.

Case No. 6. Mr. M. Complained of intense soreness in the left side of the throat with hoarseness, also a marked blephoroconjunctivitis. Examination showed a large ulceration of the left side of the pharynx with marked injection of the pharynx and larynx. A very marked pyorrhœa was noticed. Culture from the pharynx and gums showed streptococcus. A vaccine was administered and it was surprising the rapidity with which his throat symptoms subsided and of especial interest the marked improvement in his pyorrhœa. It is now four months since this treatment and there has been no return of the pyorrhœa or throat condition.

**THE INFLUENCE OF NASAL ACCESSORY SINUS DISEASE UPON
THE EAR.**

BY

JOSEPH V. F. CLAY, M.D., PHILADELPHIA, PA.

The intimate relationship of the nose and nasal accessory cavities to the eustachian tube and middle ear tract through their anatomic and histologic arrangement is well appreciated and the relatively direct course which infection can take from the former to the latter is at once apparent. The pharyngeal orifice of the eustachian tube, located as it is in the lateral wall of the naso-pharynx just posterior to the posterior end of the inferior turbinate, presents an unobstructed opportunity for the infective processes to pass into the ear. Furthermore, the mucous membrane of the nose, nasal accessory sinuses, naso pharynx, eustachian tube, middle ear and mastoid is one continuous sheet of membrane. Thus is favored the extension of the inflammatory processes by continuity from one structure to another.

It is rather a common clinical observation in the acute infections of the nose and nasal accessory sinuses to note extension to the aural apparatus. The patient with engorged mucous membrane, with the heat in the nose, the stuffed up sensation and inability to breathe through the nose and the intense throbbing headache is further discomforted by a stuffed up or full sensation in the ears, masking of hearing or pain in the ears. These symptoms all point to an involvement of the mucous membrane of the eustachian tube and middle ear. This involvement may be a simple congestion but if the patient offers the invading organism favorable media and the resistance is poor, the process passes deeper into the tissues and an inflammation is established which may result in a suppurative otitis media or a mastoiditis.

The influence of chronic disease of the nasal accessory sinuses upon the ears is far reaching and insidious in development. The association of chronic hypertrophic or hyperplastic conditions of the middle ear are frequently observed to go hand in hand with like conditions of the ethmoidal cells and frontal sinus. The so called type of catarrhal deafness or dry catarrh of the middle ears is almost invariably associated with catarrh

rhial changes in the nose and nasal accessory cavities. Very frequently we have observed improvement in the hearing and lessening or cessation of the tinnitus by treatment of the pathological condition in the nose and this without any direct treatment of the ears.

The ear may suffer involvement in cases of chronic suppurative sinusitis especially where the posterior ethmoidal cells or sphenoidal sinuses are involved. The secretion from this group of cells usually drains posteriorly and follows the lateral gutter of the pharynx, producing, through its irritation, inflammatory changes in the fossa of Rosenmüller. Here the agglomerate tissue hypertrophies, adhesive bands form causing restriction of the tubal function. This improper aeration and incomplete drainage of the middle ear cavity bring about inflammatory changes in the mucosa and eustachian tube and middle ear with resulting dull hearing and tinnitus.

Clinically the association of accessory sinus disease and chronic suppurative otitis media is not uncommon. We have observed cases in which the ear condition varied according to the activity of the suppurative process in the accessory cavities.

In many instances, the ear involvement in association with sinus disease is the result of the nasal anatomical abnormality which favors the development of sinus disease plus the pathological anatomical changes in the nose which result from the sinus disease. Thus a markedly deviated septum crowding a middle turbinate and interfering with drainage of the anterior group favors the development of a sinus disease. The sinus disease in turn stimulates changes in the turbinate resulting in a polypoid or cystic degeneration. Secondary changes occur in the septal mucosa causing a thickening. Thus the air current which was primarily poor and favored naso pharyngeal, and tubal congestion, is now obstructed. The tissue changes in the tube and naso pharynx are further augmented by the now obstructed nasal respiration and the pathological secretions from the diseased sinuses. This observation may be made clinically in a goodly percentage of cases which come to us, not for the sinus disease, but because their hearing is getting dull or because they have a distressing tinnitus. The citation of a case which recently came under our care will illustrate: A woman age 55 years complained only of tinnitus aurium in the left ear of six months' duration. Upon questioning her we found that her hearing was dull. Breathing through

the left nostril badly obstructed but lately much worse. She had the cold taking tendency. She suffered left frontal headache with pain extending deep into the root of the nose. Upon examination we found the right nostril free. The left nostril presented a large broad base spur extending along the crest of the vomer backward and upward. It extended completely across the nose grooving the inferior turbinate. The left middle turbinate was cystic, large and extended down to and rested upon the upper surface of the nasal spur. A streak of muco purulent secretion could be seen escaping from the middle meatus. The ears showed the characteristic chronic catarrhal changes, the drums were hypertrophied and dull, and the eustachian tubes thickened. The functional testing showed we had a lesion confined to the conducting portion of the ear. The cystic turbinate was removed. This was followed by a profuse discharge from the middle meatus for several days. The spur was now removed by sub mucous resection. The result of this work has been most pleasing and encouraging. The nasal breathing is perfect. The discharge from the ethmoidal and frontal sinuses is practically nothing more than normal mucous, the headaches have disappeared and the tinnitus is absent for days at a time. The dull hearing has also improved for whisper at two feet to six feet.

TWO CASES OF ANEURYSMAL EXOPHTHALMOS.

BY

PERCY A. TINDALL, M.D., PHILADELPHIA.

HAVING the opportunity of observing two cases of aneurysmal exophthalmos during the past winter, a brief outline of the condition and the course of these two cases might be of some interest.

One of the interesting points in regard to these cases is that both of them presented rather a marked similarity to each other and a dissimilarity to the greater number of recorded cases as regards some of the minor symptoms. Both of them corroborated some of the most usual symptoms and again both of them had absent one of the most frequent of symptoms. Both of them showed retinal changes, one especially severe

and which complication is comparatively unusual in the recorded cases.

The cases were not operated, one taking fairly large doses of internal medication, the other taking comparatively little and both are showing marked, in fact, almost total improvement as far as the exophthalmos and other annoying symptoms are concerned except the vision, which in one case is very little impaired, while in the other, marked impairment is present.

To be brief—the usual title under which such cases are placed is Pulsating Exophthalmos, but neither of these cases exhibited the pulsation.

Up to July 1907—DeSchweinitz and Holloway have collected from various sources the records of three hundred and thirteen cases and since that time the list has been added to by Dr. Gilbert J. Palen.

The vessels concerned in such a condition are either the internal carotid—the ophthalmic artery or the cavernous sinus. It may be a simple aneurysm of the internal carotid or of the ophthalmic artery or an arterio-venous communication between the internal carotid and the sinus or there may be an aneurysm of the carotid in the sinus.

The most frequent cause however, is the arterio-venous communication and the one most frequently producing the three cardinal symptoms—exophthalmos—bruit—and the pulsation and, of these three symptoms, the pulsation is the least important.

The great majority of the recorded cases have a definite history of trauma as the cause—with the idiopathic or spontaneous cases coming next.

The prognosis as regards life is favorable; an occasional death occurring during the course of the condition, being generally traceable to the original cause. In a small number of cases spontaneous cures have taken place. As regards the vision the prognosis should be very guarded. The records of the collected cases so far, show that the great majority have either a blind eye or an eye with more or less defective vision as a sequel. This impairment of vision is due to an atrophy of the optic nerve or some other serious intra ocular lesion.

The therapy of this condition has often proved unsatisfactory, but good results have been obtained in some cases by the ligation of the carotid—ligation of the larger veins of the orbit, especially the superior ophthalmic—compression of the

carotid—gelatin injections—and the use of internal medication and rest. We have found that in our cases absolute rest plays a very important part in the therapeutic measures.

Case 1. Mrs. J. J. married—age 40, referred to me by Harry E. Wiley, M.D., for refraction. At this time she was complaining of an occasional pain in the right eye, only occasional headaches and a marked tinnitus in the right ear of recent onset. The external appearances were negative, the vision was normal in each eye, the fundi were normal and under homatropine examination a moderate amount of hyperopia was found which was later corrected. This was on November 4th, 1914.

On November 30th, she appeared at the office with a large sub-conjunctival hemorrhage of the right eye but no other discomfort.

On December 24th, she came to the office again because of a diplopia, caused by a paralysis of the external rectus of the right eye, some exophthalmos and a marked venous congestion of the conjunctival vessels. The fundus showed a questionable pallor of the disc. From now on the conjunctival condition increased and the exophthalmos increased rapidly and was not readily replaced by pressure.

Practically all of the extra ocular muscles became involved, either from direct nerve involvement or from pressure due to the orbital infiltration.

At no time was the iris or the ciliary body involved and up to April of this year the vision remained nearly normal, when some retinal hemorrhages began to appear. A Wassermann proved negative and an X-ray examination was rather unsatisfactory, the plate showing some apparent roughening of the posterior walls of the orbit.

When the condition became severe the patient was placed in the hospital and every thing was done to keep the case at absolute rest. Slight pressure bandage was applied to the eye and fairly large doses of mercury were given as she proved quite tolerant to internal medication and only very moderate doses of potassium iodide were given.

After six weeks of this treatment, the exophthalmos was considerably reduced and the extra ocular muscles were less involved and the venous congestion was also disappearing, but a few retinal hemorrhages were appearing along the course of the superior temporal vein. This hemorrhagic condition

increased until the whole retina was involved, giving the appearance of a marked thrombosis of the central vein. At this time the patient left the hospital and I have been keeping her under observation at the office. At the present writing the exophthalmos has practically disappeared,—the bruit is still present, especially so over the angle of the jaw and the tinnitus is still present, but both of these symptoms are decidedly less pronounced. Externally the eye appears practically normal and has free motion. The retinal hemorrhages have subsided, but the vision although slightly improving is only 10/200.

Case 2. Mrs. S.—age 55 years. This patient was referred to the eye department of the dispensary by the neurological department for examination. The patient was an epileptic and gave the history of a fall, causing a laceration of the scalp. She developed a fairly well marked bin-ocular exophthalmos and marked congestion of the conjunctival veins and those of the lids and this at once suggested a cavernous sinus thrombosis. No evidence of a fracture could be determined and because of the eye condition she was referred to the eye room. Further examination showed considerable engorgement of the retinal veins and several minute hemorrhages close to the disc. With a stethoscope placed over the eyes and each temporal region a well marked bruit was easily discovered.

This patient was placed in bed in the same ward with the other patient and outside of receiving the remedies to control her epileptic seizures, practically nothing was done except absolute rest in bed for about ten weeks and mild compresses over the worst eye. The exophthalmos never became very marked, but numerous retinal hemorrhages developed and absorbed again without causing much permanent impairment of the vision. At times we could discover some pulsation, although slight, in the veins of the lid. At the end of about ten weeks, her exophthalmos had nearly disappeared as had the venous engorgement of the conjunctiva and the lids and the hemorrhages had pretty well cleared up and the bruit was less pronounced.

WASSERMANN REACTION AMONG THE INSANE.

BY

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INTRODUCTION.

SYPHILIS has been a dread disease for centuries, and probably will remain so for many years to come. It has been studied from many standpoints and investigated in detail in many of our research laboratories. Much has been learned from these studies and more is to be known before we can successfully combat the ravages of this disease and have it completely under our control.

Since the discovery of the all important biological tests and the specific germ, the relationship of syphilis to the host of pathological conditions that it is capable of producing, and the more modern methods of treatment—have we not made strides in medicine, such as is barely equaled by any of the other sciences?

Studies and research have been conducted almost exclusively among the general workers, but in this field psychiatry has not been entirely neglected as numerous limited investigations have been made by various observers.

Aside from the relationship of syphilis to paresis, tabes and cerebro spinal lues, little if anything is known of the percentage of syphilis among the insane, as a class. Many conflicting reports are observed from various quarters.

It is the object of this paper to supply this data as found by a series of examinations sufficiently extended and impartial to rule out all likelihood of artificial influence, and to determine accurately just what per cent of the insane have syphilis other than those diseases, such as paresis, etc., that have this infection as an etiological factor.

Recently two very comprehensive and extensive articles have been published on this subject, one in the *American Journal of Insanity* from the New Jersey State Hospital at Trenton, and the other in the *Journal of Nervous and Mental Diseases* from the State Hospital at Warren, Pa.

The general practitioner, in order to be progressive must keep ahead of the times, and to do this he must utilize all his reserve energy in making an effort to see what the "other fellow" is doing. One of the most valuable guides to this condition is to digest most of the current literature on the various subjects, especially that of psychiatry.

One of the objects of this paper is to contribute to this collection of data; another is to aid in the clinical diagnosis of such diseases as depend upon a syphilitic etiology; in others to diagnose obscure luetic conditions and where the patient emphatically denies ever having had venereal diseases. It is such cases that physically are often materially benefited by antispecific treatment. Furthermore there is an accurate record on hand and one need simply refer to the history of the case to see if any particular patient has a positive Wassermann reaction.

The value of this is that, knowing a particular patient has such a reaction and conditions arise which would necessitate active treatment, one need not hesitate as to the mode of therapy.

With such evidence on hand one is justified in at once instituting selective measures.

MATERIAL AND TECHNIQUE.

The material for this paper consists of 408 Wassermann reactions made on cases confined in the State Hospital at Allentown, Pa. The number includes all the patients admitted to the institution for one year prior to August 1, 1915, and all other cases committed to the hospital after March 1, 1913, before which time patients received were transfers from other institutions. In the series allowance must be made for such cases where it was impossible to obtain blood.

The Wassermanns thus obtained give a fairly accurate idea of the syphilitic conditions of patients found in the average State Institutions.

In addition to this work comment will be made as to the Wassermann on the spinal fluid in certain selective cases. A detailed report of this will be given in a later communication.

The method employed is the Wassermann complement fixation. The Noguchi modification had been used on a number of cases but did not prove satisfactory. The Lutein test may

prove of value in such, if we can rely on all that is claimed by Noguchi. The test, however, is very expensive and until it can be placed on an average commercial basis with other tests it must remain in the background as far as State Hospital work is concerned.

The reagents used are all home products, we have three sheep on the plant, make our own amboceptor and endeavor to make it as strong as possible. The latter is kept on ice for at least six months.

The complement is taken from our supply of guinea pigs, of which we have about 30. This number does not decrease as we never kill the pigs but simply anæsthetize them, open the jugular, remove the blood and sew it up again. The antigen used is cholesterinized alcoholic extract and gives very satisfactory results.

The material in this work is statistically arranged with regard to the type of psychosis, sex, civil conditions, etc. An effort will be made to determine the per cent of reactions in general as well as among those patients suffering from conditions other than directly luetic.

In order to present the actual syphilitic state of these unfortunates, General Paralysis will be discussed first, apart from the other psychoses.

GENERAL PARALYSIS.

Four hundred and eight patients of all classes were examined and of this entire number 66 gave a positive reaction, or 16.17 per cent. 209 of the patients examined were men, 196 women, showing that the male admission rate is slightly greater than the female. Thirty-five of the positive cases were male and 31 female, a predominance of only a few of the former.

Those admitted and examined since August 1, 1914, amounted to 233, 41 were positive or an average of 17.6%; of this number 22 were male, 19 female. Therefore the average per cent of new cases having syphilis is 17.6%.

Twenty-three cases of paresis were admitted since August 1, 1914, 20 of these had a positive reaction: deducting this number from the total positive cases for one year shows that 9.9% of new cases have syphilis other than those having a direct luetic etiology for their mental condition.

The per cent varies in different localities and in various

countries where investigations are conducted. Excluding paresis from our tables, one can easily assume that the proportion of syphilis among the insane is in direct ratio to that of the general community in which they had their environment. The Hospital at Allentown receives its patients almost exclusively from the eastern tier of counties in Pennsylvania, and assuming that the above is correct then 9.9% of the population, or every 10th person, has syphilis.

Various results are obtained by different investigators; Trenton State Hospital figures are 2.7%, Rosanoff and Wiseman 15.6%, Lipman 31 to 40.%. Since the main difference lies in the fact that on one hand the investigation is entirely urban and on the other hand strictly rural, it must be regarded that the type of population has more to do with the incidence of syphilis than any individual peculiarity or mental trend.

Rosanoff and Wiseman contend that there are factors in certain forms of insanity which of themselves might predispose towards acquiring luetic infection; Blascho claims that syphilis is $2\frac{1}{2}$ times as common among the insane as in the total population. Our figures support this statement in part, they show it to be twice as common as in the total population.

Twenty-eight cases, or 6.8%, paretics were found in the entire series. This number varies from time to time. General Paralysis is a very uncertain disease and results in death in the majority of cases in from 2 to 5 years. Therefore to get a more accurate percentage we must take the entire number in a single year.

Figures vary as to the total paretic number; Trenton gives it at 87.14%, Marie and Levaditi 59% and Noguchi's work on 600 cases shows an average of 84.5%.

The spinal fluid was examined in 24 of the cases of paresis (also 26 other cases, in which the diagnosis of General Paralysis was not made), the Wassermann was positive in 23 or 95.8% of the cases. Here great variations are noted: Trenton has 80.7%, Nonne 90%, Noguchi 91%, Marie 93% and Guiampetro 98%.

The following table gives an idea of this ratio in General Paralysis:

TABLE I. GENERAL PARALYSIS.

	No. cases	Positive	Negative	% Positive
Serum	28	24	4	85.7
Fluid	24	23	1	95.8

Occasionally cases are seen where the serum is negative and the fluid positive, or *vica versa*; also a few in which the fluid is either partially or completely negative. Such, however, are rare: two of them were negative except the Wassermann, one fluid was completely negative, autopsy material not yet available for study.

The typical fluid shows an excess of albumin, an increase of globulin, a pleocytosis and a strongly positive Wassermann reaction in both the fluid and blood serum. In our series there are three cases that showed a rather low cell count, but the pleocytosis is in direct proportion to the meningeal irritation.

The distribution of paresis, according to sex, is quite characteristic. In our 28 paretics 25 are men and only 10.7% of the cases are women.

A summary of general paralysis shows that 8.6% of all new cases are paretics, 1/10 of which are female. 85.7% of these have a positive Wassermann reaction on the blood serum, 95.8% on the spinal fluid. 9.9% of all new patients, other than general paralysis, have a positive reaction; this corresponds to the average outside population, depending, of course, on the community. The spinal fluid is almost diagnostic failing in only 8.3% of the cases.

DEMENTIA PRECOX.

Dementia precox is a fairly common disease of youth and these unfortunates, more frequently than not, are required to spend the remainder of their life in institution care.

In our series of 408 cases, 170 are precox or 41.6%. The distribution according to sex is nearly equal; 84 are men, 86 women. Sixteen cases, or 9.4% gave a positive reaction.

The following table gives an idea of the distribution of the Wassermann reaction in the various forms:

TABLE 2. DEMENTIA PRECOX (FORMS).

	Total cases	Positive	Negative	% Positive
Hebephrenia .	89	6	83	6.6
Catatonia	62	6	56	9.6
Paranoid	19	4	15	2.1
Total	170	16	154	9.4

By this table it will be seen that the Wassermann reaction is more common among the hebephrenic and catatonic and rather rare in the paranoid form. The following table shows the classification according to sex:

TABLE 3. DEMENTIA PRECOX (SEX).

	Hebephrenia	Catatonia	Paranoid	Total cases	% Positive
Male....	0	5	1	84	7.
Female..	6	1	3	86	11.

Here it will be seen that the female have a larger number of positive cases in the hebe. class while the male have none, the former also predominate in the paranoid form, the reverse being true in catatonia.

Seventy-nine cases of dementia precox were married, 91 single or 53½%. In this latter group the greatest number (54) are male; the reverse is true of those recorded as married, 30 of which are men, 49 women. The reaction is much more common among the single people than the married.

Of the 16 positive cases 12 are single and only 4 married, or a ratio of 3 to 1.

The proportion of the total precox cases is in similar ratio to the Wassermann reaction, 79 of them are married and 91 single, in proportion the men have relatively and actually more married people. The ratio of married to single people is as follows: male 30-54, female 49-37.

Age plays a small part in the series, seven of the cases occurring from 20 to 25 years of age; five from 25 to 40; three from 40 to 60, and one female above 60. The greater number are in their youth.

Comparing the time of the onset of the disease it will be seen that 7 of them begun between 20 and 25 years of age, 5 from 25 to 40. Both correspond to the table of ages, proving that they must have acquired it just prior to their admittance or during the period of their erotic conduct.

The physical condition of 22 of the cases was impaired, 2 male and 20 female, showing that the resistance of the female is limited. Tuberculosis is common among the dementia precox and various observers claim that from 70 to 90% of the cases have, or will have, tuberculosis. Six of our cases have

the disease in a more or less advanced degree, one of which has a positive Wassermann reaction. This may be one of those in which a positive reaction has been observed in tuberculosis, or in tubercular patients, not suffering from lues.

A similar condition was observed in a catatonic who was suffering from an attack of typhoid fever, a Wassermann taken during that time was positive. Several months later the same case was negative and as no anti-specific treatment had been instituted it was thought that possibly it may have been due to the typhoid condition.

Sixteen cases had an impaired physical condition; 12 had general debility, two were suffering from lues (one of the cerebral type), one case was senile and one was tube fed over a long period of time.

Summarizing dementia precox, we find that 41.6% of all the insane are of this type, 9.4% of which have a positive Wassermann reaction—female predominating; civil conditions affect them materially, the greater number being single. The Wassermann is much more common among the hebephrenics and catatonics, also from the ages of 20 to 25. Quite a number have impaired physical condition, due mainly to the general debility found in this dementing psychosis.

MANIC DEPRESSIVE.

Manic depressive is a disease that occurs at any age, is found in every walk of life, and fairly evenly distributed as to sex. In our series 85, or 20.8% of the cases, were manic depressive. This number is one-half the dementia precox number and thrice as many as paresis.

There is a slight predominance of women, 40 of the number being male, 45 female.

In this psychosis 10 patients, or 11.7% of the cases, had a positive Wassermann reaction. The reaction is more common in this disease than in dementia precox. This reaction represents 15.1% of the entire specific number in the series.

The following table gives an idea of the number of cases in the various forms and the positive reaction in each:

TABLE 4. MANIC DEPRESSIVE (FORMS).

	Total cases	Positive	Negative	% Positive
Manic	20	4	16	20.
Depressive . . .	43	6	37	13.9

Hypomania ..	16	0	16	0.
Mixed	6	0	6	0.
	<hr/>	<hr/>	<hr/>	<hr/>
Total	85	10	75	11.7

A glance at the above shows that the greater number of cases are found in the depressed group, more than twice the number in the manic class, it also constitutes 50% of the entire number of cases of this psychosis. More than half the number in the manic and depressed group are female. The hypomanical and mixed group constitute only a small per cent of the entire number. The civil condition of these patients is the opposite of the dementia precox, in the latter the majority are single and in the former they are married. In this series 68 of the 85 cases, or 80%, are married. 29 of the 68 patients married are male and 39 female. The remaining 17 cases are single, 11 are men and 6 women. This shows that the married predominate over the single by the ratio of 4 to 1. In the married number the female are in excess, in the single the male number is greater.

The Wassermann reaction is positive in 11.71% of the cases, it is much more prevalent among the female, the proportion being greater even than that in dementia precox.

TABLE 5. MANIC DEPRESSIVE (SEX).

	Manic	Depressive	Total cases	% Positive
Male	0	1	40	2.5
Female	4	5	45	20.
	<hr/>	<hr/>	<hr/>	<hr/>
Total	4	6	85	11.7

This table shows that 9 of the positive cases are female and only one male, or 90% are female.

The one positive male is a depressed case. The proportion of positive females in the manic and depressed group are about equal.

Age plays only a small part in the series. 39 cases are from 20 to 40 years of age, 43 from 40 to 60 and three above 60. In dementia precox the greater number occur earlier in life, usually from 20 to 25 years of age. In this group the majority are found later in life.

Fifty-two in the series had one attack, the female predominating by 10 cases; five of this group had a positive reaction. Twenty-three cases had two attacks, male and female number being equal; the Wassermann was positive in five cases. Five cases had three attacks, four had 4 attacks and one had 6 attacks; in the latter three groups the Wassermann was negative.

The physical condition was impaired in 20 cases, or nearly one-quarter the manic depressive series.

Four are men and 16 women, the greater number being in the depressed group. Four are due to lues and have positive Wassermanns; thirteen to general nutritive disturbances; one to senility and one to over exertion. In only four of the cases was the Wassermann positive.

Summarizing we find that 20.8% of all the cases are manic depressive and it is one-half as frequent as dementia precox. The Wassermann is positive in 11.7% of the series, worse in the woman ratio 10 to 1, and majority of cases of the depressed group. The greater number are above 40 years of age and had but one attack, 80% of the cases are married. One-quarter of the cases are impaired physically, 4 due to syphilis.

EPILEPSY.

Under this psychosis 22 patients have been examined, 5.3%. Nine of this number are men, 13 women, the latter predominate by a few cases, or 59% of the cases are female. Three, or 13.6% had a positive Wassermann, 2 were men, 1 a woman.

The majority of the epileptics have their onset early in life, ten before 20 years of age, five from 20 to 40, and seven from 40 to 60.

The following table shows its distribution according to sex and civil conditions, and the Wassermann in the same:

TABLE 6. EPILEPSY. (SEX AND CIVIL).

	Total single	Total married	Positive Wass.	Negative Wass.	% Positive
Male ..	9	0	2	7	22.2
Female	9	4	1	12	76.9
	—	—	—	—	—
Total	18	4	3	19	13.6

It will be seen from the above table that the number of cases is small and that the Wassermann is positive in only a few, nevertheless it gives a fair idea of the psychosis. The majority of positive reactions are male. In the entire number the females predominate and the civil conditions are evenly distributed as to sex. No married men, but four married women are in the series.

The psychosis in the majority of cases is of considerable duration, eight from 10 to 25 years, five from 1 to 5 years. Classification according to age shows that the greater number occur from 20 to 40 years of age. The epileptics are rather small in number only 5.3%, the Wassermann reaction is rather infrequent reacting in only 13.6% of the group.

The number of epileptics is $\frac{1}{8}$ the dementia precox and $\frac{1}{4}$ the manic depressive and equal to the paretics. The greater number are single. Two of the positive cases are men, the other a woman. The physical condition of all cases is good.

DEFECTIVES.

This series includes idiots, imbeciles and constitutional inferiors. We have 31 of these, representing 7.6% of all patients; 23 are imbeciles, 5.6% of all cases, 15 male and 8 female; there are two idiots, .49% of the cases, evenly distributed as to sex. Six are constitutional inferiors, 1.4% of all cases, only one male among them.

The following tables show the distribution of the various types in this class as well as the number of Wassermann reactions:

TABLE 7 "A" DEFECTIVES (SEX AND WASSERMANN).

	Idiots	Imbeciles	Const. Inferiors	No. Positive	% Positive
Male ..	1	15	1	3	17.6
Female	1	8	5	2	14.2
	—	—	—	—	—
Total .	2	23	6	5	16.1

TABLE 7 "B" DEFECTIVES (WASSERMANN).

	Male Pos.	Female Pos.	Total Pos.	Total negative	% Positive
Idiots	0	0	0	2	0.
Imbeciles . .	3	0	3	20	13.
Const. Infer.	0	2	2	4	33.3
	—	—	—	—	—
Total	3	2	5	26	16.1

These tables show that 5 of the 31 cases are positive, or that the defectives have an average of 16.1% positive reactions. Three of these are men and two women, the former are imbeciles; the two women are constitutional inferiors. Authorities generally agree that the percentage of positive reactions among the idiots and imbeciles is rather high. The entire number in this series is rather small and therefore no accurate idea can be formed of this condition; however the data thus accumulated rather disproves this fact.

The civil condition of 24 of the defectives is single, 7 are married; three constitutional inferiors are in the latter group, four are imbeciles. The Wassermann reaction is positive in three of the latter.

Age and duration do not play an important part, the majority being from 40 to 60 years of age; the duration in nearly all of the cases being from birth. The physical condition was impaired in four cases, two male and two female. The two male are in the senile period, one of the women is due to general conditions and one is tubercular with an active luetic condition.

SENILE.

There are 20 in this group, four men and 16 women, or 4.9% of all cases are senile. The female predominate by a ratio of 4-1. Three men and eleven women are married, 9 of the latter are widowed.

Five in the series were single. Six of the 20 cases or 30% are single. The ages range from 50 to 90 years the average being 69. Fifteen cases, at an average age of 72, show an impaired physical condition due mainly to enfeeblement from general senile changes.

Summarizing this condition we find that none of the senile

cases have a positive Wassermann reaction; the total number is 4.9% of all cases, 80% are women; 14 are married, 6 single, the greater number being female. The average age of seniles is 69.

ORGANIC.

Sixteen of this group came under observation, this represents 3.9% of all cases, and these are equally distributed as to sex. Seven, or 43.7%, had a positive Wassermann reaction.

The greater number are due to post apoplectic lesions, six to lues and one to trauma. One besides those of luetic origin had a positive reaction, another had cerebral lues with tabes.

Ages vary considerably the greater number being from 40 to 60. All but two cases are married, the two single men being negative to the Wassermann reaction.

TABLE 8. ORGANIC.

	Total cases	Positive	Negative	% Positive
Male	8	2	6	25.
Female ..	8	5	3	62.5
	<hr/>	<hr/>	<hr/>	<hr/>
Total ..	16	7	9	43.7

Ten cases, four men and six women had impaired physical condition. One man was in a critical condition due to lues; three were impaired, one from old age and two to general nutritive disturbances. The condition of three of the females was due to lues, one to senility and two to nutritive conditions, one of whom had syphilis.

The above shows that although the number of organic cases is limited still the Wassermann is quite common. It is more frequent among the female, 62.5% of which have a positive reaction. These cases all but one have impaired physical conditions due directly to irreparable luetic lesions. The majority of organic cases are married and fairly evenly distributed as to sex.

INVOLUTION MELANCHOLIA.

This group consists of but 13 cases, 3.1% of the series. Six are men and seven women. The average age in this psychosis is 52 years. The physical condition is good in all cases. None in the series had a positive Wassermann reaction.

MISCELLANEOUS.

Of the lesser psychoses a miscellaneous group is formed consisting of 15 cases.

Alcoholic. The alcoholic group has the largest number, namely 10, or 2.4%. Nine are men and one a woman. Three are on our books as inebriates committed under the habit act, all of these are women and have a negative Wassermann reaction. None of these three cases has been included in this list. One of the men had a positive reaction or 10% of the cases. Four of the patients are married and six are single. The duration is less than a year.

The physical condition is good in all but one case and here it is due to general nutritive disturbances.

Paranoia. This group has five cases all negative to the Wassermann reaction. Three are men and two women. The average duration is 7 years, four of them are married and one single. The physical condition is impaired in one of the female.

Drug. Three cases, or .7%, are found in this series. The Wassermann was negative in all cases. Two patients are physicians, both married and in good physical condition.

Hysterical. One case, .2% of the number is found. The patient is a married man and in good physical condition, the Wassermann reaction was negative.

Infection and Exhaustion. One male, or .2% of the cases. The Wassermann was negative. The physical condition was good but at the time of admission it was poor.

SUMMARY.

The patients of the State Hospital at Allentown, from March, 1913, to August, 1915, have had their blood serum examined by the Wassermann method for the detection of syphilis. 408 cases were examined and 66 of these had a positive reaction showing that 16.17% of the patients have the reaction.

Twenty-eight were paretics and excluding this number less than 11.2% of the remaining patients have a positive reaction. Of course the material in this paper is limited, still a fair idea can be formed of the relative merit of the work.

The following summarizing table will give an idea of the

number of patients in the various psychoses, the number of positive cases in each group and the per cent of cases having a positive reaction:

TABLE 9. SUMMARY.

	Total number	Positive	Negative	% Positive
Paresis	28	24	4	85.7
Dementia Precox. .	170	16	154	9.4
Manic Depressive. .	85	10	75	11.7
Epilepsy	22	3	19	13.6
Idiots	2	0	2	0.
Imbeciles	23	3	20	13.
Const. Inferiors..	6	2	4	33.3
Senile	20	0	20	0.
Organic	16	7	9	43.7
Invol. Melancholia	16	0	16	0.
Alcoholic	10	1	9	10.
Paranoia	5	0	5	0.
Drug	3	0	3	0.
Hysterical	1	0	1	0.
Infection and Exhaustion	1	0	1	0.
Total	408	66	342	16.17

The general per cent of syphilitic infection, other than paresis, depends on the community from which the patients are received. The particular community near Allentown has an average of 9.9% or every 10th person has syphilis.

Only one other group of cases besides paresis seems to be definitely related to syphilis, from a general survey of data, and that is the organic class. 43.7% of the group have a positive Wassermann reaction and this number is second only to paresis and far above any other psychosis.

The patients of this group include direct luetics as well as the vascular degenerations due, either directly or indirectly, to lues.

We have not made much use of the Wassermann as a control in specific treatment, in suspected cases it is invaluable. The presence of a positive reaction in certain conditions is not diagnostic but it is highly important; the diagnosis may depend on it directly or combined with other suitable laboratory tests and clinical findings.

An analysis of the total number of cases compared with those admitted within a year show that the general specific per cent is lower in the chronic than in the acute insane.

This discrepancy can be accounted for by paresis alone. The paretics have a very high per cent of positive reactions, their period of hospital residence is brief, death ensuing in 6 months to 2 years. This elimination naturally materially lowers the high percentage.

The relationship existing between the spinal fluid in cases having a positive serum reaction, other than paresis, remains to be demonstrated. It may be possible in future investigations to establish some connection between the two and thus act as a guide to possible future symptoms.

The possibilities in these cases may be any condition due to a specific involvement of the cerebro-spinal axis.

FOOD AND ALCOHOL SANITATION.

BY

PAUL H. GERHARDT, M.D., READING, PA.

FOR the last thirty years or more, there was agitation and public interest became centered on food and alcohol sanitation. The migration of rural people to the cities and the rapid increase in population in the cities, made necessary the regulation of food supply; both as to adulteration and the sanitary conditions of the product itself, also in regards to the sanitary condition under which it is manufactured, the method of handling, storage and distribution so that food should reach the consumer clean and wholesome, with freedom from infection, ferments and decay.

THE FEDERAL PURE FOOD AND DRUG ACT.

After years of agitation, by a large public interest on one side and a powerful insidious lobby representing the manufacturers on the other, Congress passed what is known as the Pure Food and Drug Act of June 30th, 1906. Thereafter, every conceivable food product in any way preserved was labeled with this Government guarantee. We should know what this

guarantee means to us. The work done by the Federal Government under this Act is largely carried on by the Bureau of Chemistry, in the Department of Agriculture. The work is regulatory, standardizing and investigational. At a meeting of Federal and State Food and Drug Officials in Washington, D. C., November 1st, 1913, the office of State co-operative food and drug control was established in the Bureau of Chemistry. In a report for the year 1914, thirty-five States had already been visited and co-operative relations established, to increase the efficiency of enforcement of the Food and Drug Act; working standards have been fixed to overcome the lack of uniformity between Federal and State Laws and should render food and drug control more economic. Not only has co-operation been established with the different State officials, but with inspectors and officials of the different Federal departments, thereby reaching many cases of adulteration and sanitation that could not have been reached through the Bureau of Chemistry alone. The provisions of the Pure Food Law being inadequate.

In one instance fifteen indictments for conspiracy connected with the shipment of filthy, decomposed and putrid eggs, containing embryo chicks, blood ringers, and what not, were successfully terminated through such co-operation; the eggs were destroyed and the guilty punished.

Through the co-operation of the Bureaus of Animal and Plant industries, in the inspection of meats, drugs and seeds, many cases are now reached that have escaped heretofore. During the fiscal year 1914, 14,275 imported articles were examined and 4,524 were denied entry. Under the provisions of the Sherly Amendment to the Pure Food and Drug Act, and by further co-operation with the Bureaus of Animal and Plant industries, medicines and manufactured articles bearing false and fraudulent labels have received attention. Warning has been given about fraudulent radio-active waters. In co-operation with the United States Public Health Service and Bureau of Fisheries of the Department of Commerce a Sanitary survey of oyster beds was undertaken.

The Bureau of Chemistry has done a large amount of work in establishing standards of different products of food and drugs, so that a manufacturer may know in advance what is required. Investigational work in food economics and for sources of pollution to prevent epidemics is now in progress.

In co-operation with the Bureaus of Entomology and Plant industries an investigation of borax was conducted to discover means to prevent the breeding of the house fly in manure. Investigations concerning canned goods and pastes such as noodles and macaroni, which are artificially colored for the sole purpose of working fraud, are now in progress. Out of 11,911 samples collected last year by the Federal Government, many were canned goods. Some of these articles were found to be in a putrid and filthy condition, preserved by benzoate of soda or a similar chemical preventing fermentation in such a way that an average person could not detect its filthy condition. The microscope and laboratory were necessary for detection in many of the articles.

It requires only 1/10 of 1% of benzoate of soda to stop fermentation of a putrid material; it is this putrid, filthy and decayed material which is more harmful than a small amount of benzoate of soda or any other chemical that may have been used.

WHERE THE LAW IS DEFECTIVE AND INADEQUATE.

What is to be called an adulterated food? Here the Act is defective. The Act condemns as adulterated food, "If it contains any added poisonous or deleterious ingredients,"—but the lobbyists succeeded in adding, "which may render such articles injurious to health."

The decision of the United States Supreme Court on February 14th, 1914, in the Federal Government's suit against the Lexington Mill & Elevator Company was favorable to the flour interests, by allowing the use of nitrous acid and nitrites in the process of bleaching flour. This case may be taken as an example. In many similar cases the Government failed to prove its case solely on account of the last provision of the Act. The word 'MAY' seems to be the Waterloo. The adding of poison to our food is not now a question, but how much may be added.

The Government officials however, are aware of this illusion of the word 'Guarantee' and of the inadequacy of the provisions of the Law. They have co-operated in an important amendment to regulations (Sec. 9) which, in effect, prohibits the use upon labels on and after November 1st, 1916, of the words "Guaranteed by Under the Food and Drug Act of June 30th, 1906" and requires the cancellation of serial num-

bers assigned by the Department of Agriculture, on the ground that the use thereof conveys a false or misleading impression to the public,—that the articles have been examined and approved by the Government and that the Government guarantees the compliance with the Law.

THE FOOD LAW OF PENNSYLVANIA.

The Food Act of Pennsylvania approved May 13th, 1909, known as the New Food Law is in some respects a better law than the Federal Act. The guarantee shall in all cases be a written or printed invoice guaranty, bearing the date of said invoice on each bill of goods purchased, signed by the vender, he personally guaranteeing that the said articles are not adulterated or misbranded, within the meaning of the Act. The Act designates strictly the articles where benzoate of soda may be used as a preservative and specifies the size of the type used, on the printed label on which the name of the preservative is printed.

It also provides for the covering and screening of meats, preserves and similar food substances that are likely to be contaminated by exposure to flies and other insects, or exposed to dust of street and store.

In the report of the Dairy and Food Commissioner of Pennsylvania for the year 1914, special attention is called to the inefficiency of the Law as regards sanitary conditions of producing and handling food, in that it practically limits the proof of unsanitary surrounding methods of handling raw material, to the facts that can be established from examination of a finished product. When the unsanitary condition of a product is established, the Courts may punish the seller, or the maker, if he can be reached, but the Act provides no legal way by which the public can be protected against the filthy, putrid, decomposed product itself, other than the cold storage Act and in the case of bad eggs which shall be denatured, and can be seized or destroyed by any State Official. During the year 1913, the Chemists of the Pennsylvania Bureau analyzed 6,846 articles out of which 1,007 were violations of the Food Laws. In 1914, 4,827 were analyzed with 1,010 violations. Under the Federal Government 776 cases of violations were terminated during the fiscal year 1914, 407 were criminal, 369

civil and 437 cases were transmitted to the Department of Justice.

Dr. Herbert D. Peas in an address delivered at a meeting of the International Milk Dealers' Association says, "It has been shown by experiments that the vast majority of dirt bacteria in milk come from animal sources, rather than human sources, but the smaller number of human dirt bacteria is of many times greater sanitary importance. The greatest stress should not be laid upon the bacteria count, but on sanitary conditions, details and methods of producing and handling the milk. Also that 98% of human bacteria can be washed from the hands of the milker by soap and hot water." Further experimentation and tests made recently by Dr. S. H. Ayers and W. T. Johnson of the Bureau of Animal Industry of Washington, D. C., demonstrated the ability of Streptococci to survive pasteurization. Proper sanitary conditions, therefore, to lessen bacteria of all kinds in milk is more important than an ineffectual effort to destroy them.

ALCOHOL SANITATION.

In regard to alcohol sanitation the same may be said. Artificial coloring, artificially carbonated, carbonic acid gas added to inferior alcohols fermented from the filth and residue of sugar and molasses manufacture, added to blended drinks are very common. Cases of misbranding are continually before the Courts on charges made by Pure Food officials. The unsanitary condition of the product must not alone be considered here, but many of the drinking places are very unsanitary. The corner saloons, generally, owned by the Brewing Companies are the chief offenders. Here the moral effect must be considered as well as the physical effect.

These facts and figures show that in spite of the most admirable and painstaking work done by the Pure Food Officials of the Federal and State Departments and the material and efficient aid given by officials of other departments, the purpose of the laws, "The proper protection of public health, and the prevention of Fraud," has not been adequately fulfilled. Many dangerous and poisonous foods are still offered for sale.

AN EFFICIENT LAW.

A more efficient pure food and drug law is therefore necessary, and is advocated by the Pure Food and Drug officials as

well as by chemists and specialists interested in this line of work. Such Legislation requires the stimulus of organized and well directed efforts. The State and National medical societies are not only well fitted for this propaganda but it is, furthermore, their duty to be foremost and assist in securing such legislation.

The standards of Prof. Allyn may serve as an example for what such a law should be.

1. Food shall be packed and sold under sanitary conditions and package goods shall bear no dishonest label, nor labels bearing any extravagant or obscure statement.

2. Foods shall not be colored with coal-tar dyes, nor with poisonous vegetable colors, nor be contaminated with inert fillers; nor shall any substance be taken therefrom or added thereto, so as to injuriously effect their quality, strength or purity.

3. Food shall not contain added alum, copper, formaldehyde, sulphurous acid, or its salts, nitrous acid, or nitrites, boric acid or its salts, benzoic acid or its salts, formic acid or its salts, hydrofluoric acid or its salts, salicylic acid or its salt, or any other non-condimental preservative.

Dr. Carl Alsberg, Chief of the Bureau of Chemistry, Washington, D. C., in an address before the National Civic Federation said, "There is but one need in pure food control which is so vastly more important than any others, that I propose to urge it alone upon your consideration. It is *adequate, sanitary and hygienic control of food.*"

In conclusion we must admit that many contagious and infectious diseases at least would be far less prevalent by a better sanitary and hygienic control of food and drink. We are only beginning to learn about the effect of food and drink on the etiology of diseases of the alimentary tract, arteriosclerosis, and chronic nephritis. More than 100,000 people die every year in the United States of Bright's Disease. In the last ten years the average increase in large cities was 50%. Recently in addresses delivered by Drs. Wm. J. Mayo and L. Duncan Bulkley, physician to the New York Skin and Cancer Hospital, attention was called to the importance of food on the causation of cancer. Especially the putrefaction of meat or toxins produced thereby. In four of the largest Life Insurance Companies of the United States the extra-mortality of non-abstainers of alcoholic drink over abstainers is 56%. It

seems quite apparent, therefore, that the quality of our food and drink, is directly or indirectly, responsible for many of our diseases, and makes necessary a more adequate law for the sanitary and hygienic control of food and drink, if we wish to perpetuate in our posterity the strength of body, soundness of mind and sturdiness of character necessary to maintain and advance our national life.

TWILIGHT SLEEP—A BRIEF CONSIDERATION OF ITS INDICATIONS AND TECHNIQUE.

BY

J. EDWIN JAMES, JR., M.D., PHILADELPHIA.

IN viewing the history of Obstetrics, it is interesting to note the rather rapid and marked advancement within a comparatively short period of time which this branch of the medical art has made to the point of a distinctive and generally accepted speciality. Not so long ago, confinement cases were chores for the midwife, the physician only being called when some unusual emergency arose without the pale of the ability of the unskilled attendant. In contrast, today, we mark the well-founded tendency towards the complete elimination of the midwife; we heed the enforcement of deeper and fuller study of obstetrics in our colleges, supplemented by the most thorough and careful practical training before the privilege to practise is granted; we see the elevation of the one who follows the strict practice of obstetrics to the position of "Obstetrician" through surgical drilling. Concomitantly, we recognize with gratitude a growing interest and knowledge on the part of the laity in all things pertaining to child-birth, whereby a well-grounded belief has been inculcated that many of the so-called "accidents" of the confinement room are depended upon unskillful, meddlesome and unnecessary practices and manipulations. We find the laity of today demanding that physicians practice obstetrics according to the dictates and teachings of modern methods.

These facts I mention as a brief prologue in order to emphasize the following point, namely, that in the wake of the advance of modern midwifery, it appears that but compar-

atively little time or thought has been given to devising or perfecting some uniform or easily and generally applicable measure of mitigating the sufferings of the woman in labor. Labor has always been synonymous with "pain." Historians lead us to believe that among the early races and generations, the sufferings of confinement were not intense and the process was quickly and easily terminated. With the advent of civilization and refinement, it would appear, that the physiology of this normal process of life has shown an alteration. Although we cannot say there has occurred any marked increase in the proportion of serious dystocia depended upon developmental abnormality or deformity, yet we are compelled to admit that labor at the present time offers a more sinister aspect through its tendency to decidedly increased length, increased pain and greater frequency of morbid after-results, especially where improperly or unskilfully attended. To compensate modernism's toll of time and pain, little of practical value has been offered. Perhaps with improvement in the technique of the management of labor, skilled observers and clinicians have noticed very little physical detriment or injury as an after-result; it is possible that experimentors, observing no permanent physical stamp of the acute suffering, no matter how prolonged, concluded that the drugs and measures used for amelioration were not only unnecessary but were capable of more harm than good. Experimentations have been carried out with opium derivatives, chloral, general anæsthetics, etc.; in all of which there was observed, uniformly, a retardation of labor through inhibition of both the voluntary and involuntary forces.

Adherents and followers of present day methods of so-called "painless childbirth" call attention to the importance of the psychic trauma and not so much the physical strain, as the one prime and essential, ominous after-result to be combatted and prevented. Emphasis is made upon the abnormal mental state left upon the parturient woman; a mental exhaustion which tends to beget a certain definite psychic strain or unbalance resulting in slow and frequently imperfect convalescence. A state of mental perturbation or a transient psychasthenia is quite a frequent finding at the close of labor; it has been my observation, however, that such a state is of exceedingly short duration and in no case has there occurred any permanent derangement of mentality, major or minor.

from unassisted labor, except in those in whom there was a distinct, underlying pathological basis.

I am a thorough believer in the dictum which holds the first duty of the physician to be that of relieving suffering. In the practice of obstetrics, the attendant is duty bound to do that which will tend to the amelioration of intense suffering and to the making of the process of labor an easy one; but, what he does, what measures or means he makes use of to accomplish such a purpose must always offer and guarantee safety to the two lives concerned; such measures or means must not only be free from all suspicion of possible harm to mother or child, but also, in no possible way may they militate against the full accomplishment of a perfectly natural, spontaneous process.

At present, chiefly through the instrumentality of the lay press, public interest and attention has been directed to what has been termed a "new and painless" method of childbirth; to a procedure, we are thus led to believe, which is void of all possible harm to mother and child and which is a veritable panacea for all the ills and sufferings of labor. Upon the notoriety so given this "Twilight" sleep, the public at first marveled why the medical profession at large was so ignorant and negligent concerning such a wonderful help to confinement, and tended toward a movement to demand that physicians immediately adopt the method routinely. I know that many physicians yielded to importunities and attempted twilight sleep merely upon facts given in commercial articles. Dire results occurred because of the lack of knowledge concerning its decided dangers and marked limitations. With a few exceptions, the larger medical clinics and clinicians offer but little enthusiasm over the method. It is interesting, also, to note the rise of a more recent school, condemning twilight sleep in favor of a much less harmless procedure, we are again told, namely, the use of detoxicated morphine.

The basic drug of twilight sleep, scopolamine, has been used in obstetrics since 1902; the results obtained with it in the Freiburg clinic in the first one thousand cases were published in 1907. Other clinics experimented with it during this period. The reports showed exceedingly variable effects. The prime difficulty observed was the inability to determine individual dosage. Since 1907 Gauss of the Kronig clinic in Freiburg, has developed the "memory test" as the proper and most

efficient guide to estimate individual idiosyncrasy and to determine specific dosage. The report of the second one thousand cases under this amnesia test shows decidedly more uniformity in results obtained. Other clinics have experimented with "Dämmerschlaf" using the memory test; the results of these show more variance than that of Freiburg, the successes obtained varying from as high as 40% to 60% in a few, to 10% and 20% down to complete failures in others.

It should be distinctly understood that Twilight sleep does not mean painless birth in the broad sense of the word. Labor pains are just as intense, so far as actual suffering is concerned, in the twilight sleep zone as in unassisted labor; patients will beg just as often and as bitterly for the attendant to give them something to relieve their agony. In consequence, as usual there still persists in this procedure, the prevalent tendency for the physician to yield to the temptation of early delivery to relieve suffering; hence from this viewpoint, we note the proportion of cases coming to forcep delivery, *not* decreased.

It should, likewise, be borne in mind that the use of twilight sleep has nothing to do with the early arising of a patient from her bed following delivery. Quite a number of clinics, notably Freiburg, have experimented with the effect of allowing cases out of bed early, usually about the third day. The reports obtained show quite a variance of opinion as to the rationale of such a rule. Gauss claims the rule especially applicable to cases following twilight sleep because of the absence of the usual mental and nervous exhaustion present following unassisted labor.

The real issue and main object in the use of twilight sleep is to place the patient in what is termed the "twilight zone," or in that degree of scopolamine anæsthesia wherein the case shows a loss of mental perception or a loss of memory for all incidents occurring during the length of the drug effect, without disturbance of consciousness or effect upon the intensity of the forces of labor. A patient reacting from such a "sleep" is able to recall nothing definite of her confinement.

To induce this twilight zone, according to the Gauss method, the drugs used are scopolamine hydrobromide and morphine-muriate. The dosage of the scopolamine varies from 0.0003 gram. to 0.00045 gram. (about 1/150 gr. to 1/200 gr.) That of the morphine is usually 1/6 grain.

The scopolamine in preparation is unstable. For usage, it

must be prepared with a preservative (10% mannit or sexa-tonic alcohol in distilled water), or it must be made fresh immediately before injection. Even where a preservative has been used, it is recommended that the solution be tested before injection, if it has stood for any length of time. For this purpose a few drops of a weak solution of permanganate of potash may be added to the scopolamine solution; if a brownish-yellow color appears it designates an impurity (apoatropin). All preparations of the drug should be placed in small glass receptacles, hermetically sealed and accurately sterilized before usage.

Narcophan and Pantopon have been used as substitutes for the morphine muriate.

The technique of twilight sleep is as follows: The case should be selected as one perfectly normal, one in which at least there is no well marked evidence of dystocia. The patient, preferably, should be placed under careful observation and regime for several days before the expected labor, in order to induce a certain quieted mental state. This is an aid and not an absolute essential. When labor begins, she should be placed in a room especially prepared for the confinement, where there is freedom from all extraneous noise and disturbance; the room should be kept darkened, pledgets of cotton should be placed in the ears of the patient and, it is advised, to keep a light weight covering over the eyes. Make sure the patient is in labor; before making any injections, await the appearance of regular, hard close pains. These should be at least at five minute intervals. At such a period, then, the method may be begun by an injection, first, of the morphia, subcutaneously, followed immediately by the scopolamine, usually 0.0003 gm. as the initial dose. The memory of the case is then tested from time to time. This may be done in any manner, for example showing her some unusual object for a moment or two and then in a short while bringing it before her and see if she recalls having observed it previously. Any means of determining the power of memory may be used. If at the expiration of three-quarters of an hour no amnesia is present, a second injection of the scopolamine is made, using for this usually 0.00015 gm., the dosage at this as well as at subsequent times being determined by the general state of the patient and the amount of the general scopolamine effect obtained aside from the twilight zone. Mark you, please, the

morphia is not to be repeated. It has been claimed that many of the failures in using twilight sleep have been due to repeated injection of the morphia. There are some cases, however, where morphia or its substitute must be repeated to overcome the frequent and marked mental excitation secondary to scopolamine even in its initial small dose.

If the twilight sleep has been successfully obtained, then the memory must be frequently tested. So long as amnesia is present, do not repeat the scopolamine; as memory returns, repetition is indicated. Gauss claims that two to three injections only are sufficient for the average length of labor.

Other tests to control dosage which have been recommended are the pupillary test (absence of dilatation with each uterine contraction under scopolamine) and the inability of the patient to show motor co-ordination.

A patient in twilight sleep is to be observed most carefully. The temperature, pulse and respiration rate are to be frequently noted. The foetal heart tone, as to rate and rhythm, is to be constantly watched. It is essential that the attendant be well versed in all the abnormalities and emergencies likely and possible to arise during the course of the labor and be in a position as to armamentarium, skill and surroundings to immediately cope with such as they appear. This regulation demands that the physician, then, remain with the case from the beginning of the sleep to the time when the patient has fully reacted. All recognized investigators of twilight sleep are positive in the claim that the procedure is one for hospital use only.

In the true "twilight zone," the abnormalities uniformly met are variations in the foetal heart tone designating asphyxia in utero, and prolongation of the entire length of the labor. Both of these have called for hurried termination of the labor. As to the asphyxia following delivery, all experimentors agree upon a very well marked frequency. The Freiburg clinic claims an exceedingly small proportion of true apnoea present, their cases of asphyxia being of minor degree and readily responding to the usual methods of resuscitation; the foetal mortality rate, then, from this cause showing no increase. Reports from other clinics, on the other hand, show asphyxia neonatorum of a momentous type in a large proportion of the cases; the more vigorous and radical methods of artificial respiration having been called for, with a necessary tendency

towards increased foetal morbidity if not actual increased mortality rate (immediate).

Following delivery, the case requires special attention until full reaction from the scopolamine has occurred. During the immediate post-partum period to aid reaction, massage and passive exercises are to be carefully instituted, especially of the upper and lower extremities. The length of time this requires depends upon the amount of drug used, and consequently upon the length of the labor. The average time for complete reaction has been observed to be two hours. Careful watch must be exercised upon the tonicity of uterine contraction and for post-partum hemorrhage. It is generally conceded that under skillfully administered twilight sleep, the maternal mortality rate is not increased, though the morbidity tendency is because of the greater demand for more frequent operative interference. Adherents of the procedure claim a more rapid and easier convalescence in uncomplicated cases, and some claim to have observed earlier and better establishment of breast activity.

It can be readily appreciated from the foregoing that the technique to place and keep a patient in the true "twilight zone" is difficult, and requires, in addition to skill in application, time and diligence. The amnesia test as to dosage is undoubtedly the best to follow; at the same time it is not to be considered infallible; even with it, it is easy to cross the exceedingly narrow boundary line between twilight sleep and deep scopolamine anæsthesia without a warning and thus seriously complicate the case. With the use of the small doses of the drug repeated according to loss of memory, a very large number of cases have shown a marked tendency towards mental excitation and delirium, these patients becoming so violent at times as to demand restraint and the free use of some narcotic. This acute mental state was a most noticeable feature in our experimentations. Enthusiasts of twilight sleep, naturally, claim that where uniform results and proper effects are not obtained those who make use of the method do not do so according to the recognized, perfected technique. It does, however, seem rather peculiar, that only a few men to date, out of the many who have tried, have been able to sufficiently skill themselves in the proper technique so as to obtain uniformly brilliant results and to become enthusiasts and devotees of the procedure.

Personally, it is my opinion that "Dämmerschlaf" is not to be thought of or used as a routine method in labor. It may have certain advantages in a few selected cases, those especially in whom there is a well marked neurotic tendency, the hysterical primiparous girl, for example, where it is so essential to obtain a degree of mental control in order to facilitate the normal progress of the labor. It should be and probably is an excellent *modus operandi* in the case susceptible to auto-suggestion. Unquestionably, it is capable of harm to both mother and child where used without knowledge of its distinct dangers and limitations. To obtain the desired twilight zone minus too deep a scopolamine anæsthesia is exceedingly difficult and means in addition to the extra time and ability of the attendant, ideal environments and many unusual adjuvants. The impossibility of obtaining uniform results together with the added risks for so little gained are the reasons why I have not accepted this method as an ideal one to induce "painless childbirth" and I feel sure are the reasons why the procedure has not been adopted by reputable clinicians universally long before the advent of its recent publicity through commercialized advertisement.

By way of conclusion, I desire to bring to your attention the value of "Obstetrical anæsthesia" in offsetting the extreme suffering concomitant with labor. During the past year, with the co-operation of Dr. R. Franklin Hill, I have made use of chloroform inhalations routinely in all cases except those offering distinct contra-indications or in the rapid pluriparous women. The inhalations we prefer to begin towards the end of the first stage of labor, the time largely depending upon the severity and regularity of contractions, and are continued until the labor, together with the usual immediate after attentions, has been fully accomplished. We have effected quite readily a degree of anæsthesia which allows of an exceedingly easy labor wherein there has been no inhibition of the forces of labor, the time of the confinement not being lengthened and the cases going on to spontaneous delivery where conditions obtain for such; wherein there has been no disagreeable after-results, the patients reacting almost immediately; and wherein there has been absolutely no tendency towards increased asphyxia neonatorum of any degree. It has been a matter of astonishment to us to note the frequency of a true amnesia in these cases; in many instances those patients have

been unable to recall, accurately, anything concerning the time or intensity of their labors. To acquire such effects, necessarily, the chloroform must be administered with skill and competency and with an experience in its use in the different forms and stages of labor. With experience and practice, and especially in efficient hands, it is the most satisfactory method of painless childbirth; it is harmless because of the exceedingly small dosage, the patient never being completely anæsthetized. Furthermore, for the proper immediate repair of lacerations, or where indications arise for operative interference, the anæsthesia may be quickly deepened to the required point and thus conserve, in many instances, inestimably valuable time for patient and child.

INOCULATION AGAINST MUMPS.—In a study of anti mumps inoculation, at the Hebrew Infant Asylum, Dr. Alfred F. Hess inoculated 20 children whom they were sure had not had mumps before with the blood of convalescent patients, using 6 to 8 cm. of blood from the vein of the elbow of the donor and injecting it intra muscularly. These 20 children were divided into 3 groups. Four of them were inoculated with blood from patients who had just recovered and in whom there was still some swelling of the parotid.—A second group was inoculated with blood from patients about ten days recovered from the disease, while in the third group blood from patients who had had the disease several years ago was used. The injections were made when the disease had reached considerable proportions. All of the children were then put in the mumps wards and then transferred to other wards in which mumps had developed. In all of the wards mumps occurred to a considerable extent after the children were exposed but not one of the inoculated children contracted the disease. The same result seemed to be shown where the children were inoculated with blood from those who had had the disease several years ago, as when the blood from recent convalescents was used. The length of time during which the immunity lasted had not been determined. Dr. Hess said he believed the method could be made use of in other infectious diseases as well as mumps where immunity was conferred by one attack of the disease. It seemed likely that at some future time they might learn how to apply it in scarlet fever.—*Amer. Journal of Obstetrics, Diseases of Women and Children*, July, 1915.

EDITORIAL

THE FINANCIAL PROBLEM CONFRONTING THE HOMŒOPATHIC MEDICAL COLLEGES.

A GOOD deal of thought has been given in homœopathic circles during the past few years to the question of perpetuating homœopathic institutions and especially our homœopathic medical colleges. It is quite generally recognized that the future outlook for these institutions is not as satisfactory as it was ten years ago.

A large number of theories have been advanced to explain the decline in strength of our medical schools during the past ten years. For example there are those who attribute our falling off in students to inadequate teaching of the principles and practice of homœopathy. Others offer as explanation, the growth of therapeutic nihilism and the general decline in faith in the efficacy of drug therapeutics, while still others place the blame on personal quarrels and jealousies that prevent harmonious action among the members of the faculties of our schools.

It is probable that there is some truth in each of these theories and that all of them have been factors in preventing a normal growth of our homœopathic colleges. We are convinced however that Dr. Royal S. Copeland has placed his finger upon the keynote of the whole matter when he stated in an address before the American Institute of Homœopathy that the real cause for the lack of advance in our homœopathic institutions has been *a want of money*.

"After twenty years of professional life" says Dr. Copeland, "I am convinced that the future of organized homœopathy is purely a matter of dollar and cents. Give me the money and I can organize a medical college big enough to supply clinical teaching and place it in Class A in five years."

Our own observation is in entire accord with Dr. Copeland's. When we review the history of our large medical institutions such as Johns Hopkins, Harvard, University of Pennsylvania, etc., we find that their growth has been made

possible by the liberal financial support that has been accorded them. Millions of dollars have been expended in every one of the institutions above cited in the establishment of laboratories, clinics and in providing salaries for men who devote their entire time teaching and to research work. In addition to this, the work they are doing is daily brought before the people throughout the entire country, through the medium of the public press. It is needless to say that this publicity which has done much to build up their reputation, is only to be obtained at the expenditure of a great amount of money and effort, and it is small wonder that the average homœopathic institution finds itself comparatively unknown outside of its own immediate vicinity.

Dr. Copeland has done that profession a great service in calling attention to the fact that we must make an earnest effort to secure financial support from wealthy patrons of homœopathy if our institutions are to be successfully perpetuated.

Denunciations of modern methods of teaching homœopathy, attempts to separate "the sheep from the goats," will only tend to weaken our cause and to endanger our organizations. What is needed more than anything else in order to put homœopathy in the forefront is such financial endowment as will enable our institutions to employ competent teachers and workers who can devote their time and energy to the study of drug effects in accordance with the principles laid down by Hahnemann and to applying of the results of these researches to diseases which are now incurable or intractable to medical treatment. When we recall the time and expense involved in the investigations of the effects of sodium benzoate as a preservative by the United State government, we can form some idea of the work and money that must be expended in studying minutely the effects of drug agents on healthy human beings in accordance with modern methods.

We have many wealthy patrons of homœopathy who have benefited by the applications of its principles to themselves and to their families. At a fair estimate we have at least seven millions citizens in the United States who are under homœopathic treatment. Out of this immense number of people, there are undoubtedly many who are willing and able to make contributions for the support of our homœopathic colleges if the matter were properly placed before them. In fact some

of the largest endowments given to old school institutions have come from homœopathic families.

Unfortunately the average practitioner of homœopathy has manifested but little interest in the perpetuation of our medical schools; he seems to feel that, somehow or other, it is up to the faculties to keep these institutions going. Conditions that made it possible for the colleges to be self-supporting in the past no longer exist. Contributions from the laity in large amounts must be forthcoming if our colleges, or in fact if any group of medical colleges, are to be perpetuated.

G. H. W.

A NATIONAL MEDICAL LICENSE.

FROM time to time a national medical licensing board has been advocated by physicians who cannot understand why a man should be adjudged capable of practising medicine in one state and incapable, in the eyes of the law, in another state. The fact that such unreasonable discrimination is based upon the theory of state rights, does not appeal to the average physician as being a satisfactory answer and it is certain that any legitimate movement for a national medical license would have the unanimous backing of the medical profession. Constitutional lawyers have made it clear that we are a confederated form of government and a national law of this character is impossible. An attempt, however, is now being made to establish such a system of national licensure by the voluntary consent of the states.

In an address before the American Medical Association at San Francisco, Dr. Rodman, the recently elected President of the Association, has described a plan which he expects to inaugurate in the near future. According to reliable reports, a National Board of Medical Examiners is to be formed consisting of the surgeons general of the United States Army and Navy, and Public Health Service, with a confederation of State Boards of Medical Examiners; the Association of American Medical Colleges; the American College of Surgeons; the American Medical Association. This board, it is planned, will meet in Washington in October to examine such candidates as present themselves.

It is hardly probable that the action of a Board thus con-

stituted would receive recognition from any large number of states. It would of course have no legal standing whatever and any license granted by it might be accepted or rejected by the several states as they pleased. Unfortunately, the Board is of strictly sectarian character and by no means represents the entire medical profession in the United States.

While we admit the desirability of a medical license that would entitle a man to practice throughout the entire county, we feel confident that Dr. Rodman's proposed Board, representing merely one branch of the medical profession, will receive no general professional or legal recognition.

G. H. W.

DIET IN THE TREATMENT OF NEPHRITIS AND URINARY CALCULI.—N. R. Blatherwick, in the *Archives of Internal Medicine* for September, 1914, reports dietetic experiments in human subjects which showed clearly that urinary acidity, as well as the solvent power of urine for uric acid can be materially changed by variations in diet. These changes, it was found, are referable to the character of the ash yield by the various foods. The possible presence of organic substances, such as benzoic acid, which are excreted as acids, must also be taken into account. In general, foods yielding an alkaline ash were found to decrease urinary acidity, while those yielding an acid residue increased it. According to Fischer, the cause of the pathological condition in nephritis is an abnormal production or accumulation of acid in the kidneys. The acid favors the solution of the kidney colloids; hence the albuminuria. The treatment indicated, therefore, is the introduction of bases, and for this purpose Blatherwick's research showed the marked suitability of most fruits and vegetables. Conspicuous exceptions, however, were found, prunes, plums, and cranberries causing increased acid production instead of the expected decrease. On the other hand, dietaries made up largely of potatoes, with smaller amounts of apples, bananas, raisins, and oranges, proved an excellent means of introducing the desired bases into the body. Very suitable also, but obtainable only in the summer months, was the cantaloupe. Tomatoes proved of some, though less value. Care is enjoined not to allow too much of the cereals, including rice and whole wheat bread, and of meats, which have a predominance of acid forming elements. A high urinary acidity favors the formation of uric acid calculi, which comprise from sixty to eighty-one per cent. of all urinary concretions. The author's results showed that acid urines are always supersaturated with uric acid and will show precipitation when opportunity for the establishment of an equilibrium is given; on the other hand, alkaline urines are always capable of dissolving added uric acid, showing that as excreted they are not saturated with this acid. Where a tendency to the formation of uric acid calculi is to be overcome, the urine must thus be of low acidity. This condition can be fulfilled either by ingestion of alkalies or by eating some of the many suitable fruits and vegetables. These have a further advantage in that their purin content is negligible. In persons actually harboring uric acid calculi the form of diet mentioned is, of course, of value.

GLEANINGS

ON THE THERAPEUTICS OF ORGANIC EXTRACTS.—The *British Medical Journal* of February 6, 1915, contains an interesting article by Grunbaum on this vital topic. Considering the suprarenal glands he says we must remember that they consist of two parts which have very different functions: the medulla, which elaborates the material which affects the sympathetic system; and the cortex, which the writer has reason to believe possesses a controlling influence over growth and the development of the reproductive system. A number of years ago a paper appeared by Sequeira and Bulloch which pointed out that children who had hypertrophy or adenoma of the cortex of the suprarenal glands were of abnormal size—a boy of ten appearing to be about eighteen, and becoming sexually mature at a very early age. Basing himself on this, he fed several undersized and apparently otherwise normal patients upon dried suprarenal cortex with the hope that it would lead to an increase in their stature; but the results in every case were negative.

The dried medulla, or its active principle adrenalin, may be used for a variety of purposes: (1) In order to diagnose suprarenal inadequacy; (2) to supply the secretion of the medulla in cases in which the secreting power of the gland is temporarily paralyzed or permanently damaged; (3) to control hemorrhage from the stomach; (4) as an injection to raise the blood-pressure.

In order to diagnose suprarenal inadequacy, the blood-pressure of the patient should be measured accurately on several occasions, and then 12 grains of dried suprarenal should be administered three times a day for four days; if a material rise in pressure be observed, the drug should be stopped and the blood-pressure measured again to see whether it once more falls. If the rise during the administration by the mouth is considerable, the diagnosis of suprarenal inadequacy is fairly certain.

The evidence upon which this is based was obtained sixteen years ago, when it occurred to the writer that good treatment for hematemesis would be the administration of the gland by the mouth led to a general rise of blood-pressure, because if it were to do this the treatment might do more harm than good. On taking suprarenal gland in large doses the writer found that his blood-pressure was not raised, and on trying it on patients he found that it was only in cases of Addison's disease that the blood-pressure went up; this led to his using it as a diagnostic method.

In cases of Addison's disease suprarenal may be administered by the mouth, in order to supply some material which is wanting; but it is quite useless to order five grains three times a day; if any good is to result large doses must be administered—20 or 30 grains three times a day, continued indefinitely.

Occasionally it is wise to give adrenalin during temporary paralysis of

the secreting power of the suprarenal gland, such as occurs in diphtheria and possibly other toxemias, whilst an injection of adrenalin hydrochloride has become the regular treatment by some prior to the injection of salvarsan, which is said to cause fall of blood-pressure, owing to its inhibitory effects upon the suprarenals.

In the writer's opinion, adrenalin hydrochloride is probably the best drug to control hemorrhage in gastric ulcer.

He has already mentioned that it does not cause a rise of blood-pressure. If it is to be administered with any chance of success it must not be given three times a day; that is worse than useless. Repeated small doses (say 1 cc. of 1-in-1000 solution) every hour are required, because after its removal there is a tendency to reaction, and this can be prevented by keeping small quantities of the drug in contact with the damaged vessel and thereby maintaining its contraction.

As an injection to raise the blood-pressure, it has been used in certain cases of shock, and frequently in pneumonia. How far it is useful as a cardiac stimulant is a question which the writer is not able to answer. He trusts that we may hear of some experiments made in order to decide this question. He would be much interested to hear whether any success can be recorded in the treatment of hemophilia by adrenalin. Quite a long time ago he made a statement that in his experience it was useless, and the cases which have been recorded in which it is stated that adrenalin stopped the hemorrhage of hemophilia have never stood investigation. It must be remembered that a case can only be considered one of hemophilia when it occurs in a male and when there is a definite history of the maternal grandfather, or possibly of the maternal grand uncle, having suffered from the complaint.

The application of adrenalin to the nasal mucous membrane in hay-fever is apparently occasionally of great value, whilst in asthma hypodermic injections may produce miracles.

The physiological action of pituitary* suggests a great number of uses in therapeutics. Since it acts on plain muscle directly and constricts the arterioles it may be used with advantage in all cases of a temporary fall in blood-pressure. Repeated injections are practically useless, therefore it is not of much value if the cause of fall in blood-pressure cannot be overcome rapidly. Physiologists agree that the extract does not lead to any contraction of the renal arteries, and therefore the injection causes an increased flow of blood from the kidneys and an increased secretion of urine, but how far this increased secretion of urine is accompanied by an increased excretion of metabolites is a question which has not been decided. Nevertheless, pituitary extract is indicated in cases of edema and threatened uremia.

Since pituitary extract causes contraction of the plain muscle, it would be of use occasionally to make the uterus contract. Certain parts of the pituitary gland possess a substance which increases the secretion of the mammary gland, but whether this has been used in practice the writer knows not. With the exception of the use of the gland for raising blood-pressure and meeting shock, the writer has had very little experience of it except in those cases in which there has apparently been some atrophy of the gland. This, we have been told, leads to a deposition of fat and often

to altered mental condition; slighter cases come under the heading of Dercum's disease. The difficulty in treating these is the fact that reliable extract of pituitary or dried pituitary gland is very costly; and, just as in Addison's disease the administration of a small dose of suparenal daily by the mouth is useless, so, too, small doses of pituitary prove useless when the pituitary gland is atrophied, whilst large doses, as the writer has already said, cost a great deal of money. Nevertheless, in two cases patients have taken comparatively large doses with apparent benefit—that is to say, their weight has decreased whilst the mental condition has improved. In one of these the diminished activity may have been temporary, as the writer hears the patient is now able to lead a normal life without taking the daily dose.

When the pituitary gland secretes more than a normal amount, there is apparently a great stimulus to growth in certain parts of the body, especially in the tissues, and this leads to the condition called acromegaly. During the hypertrophic stage the administration of pituitary would probably do more harm than good, and there seems to be some similarity between what takes place with the thyroid and pituitary, although the older views, that the pituitary gland was able to take over the function of the thyroid and that the thyroid was able to take over the function of the pituitary gland, are no longer held; nevertheless there seems to be this similarity—not infrequently after hypertrophy of the thyroid, which leads to exophthalmic goitre, atrophy occurs and causes myxedema, whilst in hypertrophy of the pituitary gland some degenerative process takes place and leads to its atrophy, and in this latter stage the administration of pituitary gland leads to improvement.—*Therap. Gazette.*

DIAGNOSIS OF COLON CANCER.—Burke, writing on this subject, states:

The clinical picture of a typical case of colon cancer can be best outlined as follows:

When an anæmic patient who has never had any infectious disease, and who enjoyed perfect health up to a certain given moment, particularly as regards his digestion, suddenly with or without dietary indiscretion, begins to suffer with colicky pains, with rumbling noises in his abdomen and radiation of pains toward the anus, accompanied by rectal tenesmus, and either in addition to obstinate constipation or diarrhœa notices a great loss of weight and increasing muscular weakness, cancer of some part of the bowel should be immediately suspected when the stools contain blood, mucus or pus, or all three at one time the further suspicion of cancer is strengthened; and if a mass is also found in any part of the abdomen with or without visible peristalsis or intestinal rigidity, the positive diagnosis of cancer is assumed. The finding of a tumor is the "*sine quæ non*" in the positive diagnosis and this must always be established before a diagnosis can be made.

PROGRESS IN ORTHOPEDIC SURGERY.—Under this title Osgood, Soutter, Bucholz, Low and Danforth (*Boston Medical and Surgical Journal*, March 25, 1915) quote Frelich, who has given much consideration to the tuberculous processes in infants and has pointed out certain special features which these infantile cases present: (1) A tendency to hypertrophy in both bone

and joint affections with an early opening and a short sinus period. (2) The frequent involvement of the shaft of the bone in contradistinction to the usual epiphyseal lesion of later life. (3) The tendency to dislocation, especially in the diseases of the hip-joint. (4) The occurrence of an acute form most common in the knee and elbow, running a rapid course, healing soon after evacuation, and leaving little stiffness. (5) The common existence of multiple bone foci. (6) The predilection of the process for the testicle and the immunity of the prostate.

In making the diagnosis, syphilis and a staphylococcus infection must be carefully excluded. The mortality is about ten per cent. The process in the viscera and peritoneum runs the same grave course as in older children, but in other locations the tendency to spontaneous recovery is very noticeable. This should lead to much more conservative surgical treatment than in older children.

Vulpus considers his results from the Albee operation of bone graft into the spinous processes in tuberculosis of the spine to have been very satisfactory. He emphasizes the eminent pain-reducing effect of the operation and the increased activity of the children. He insists upon prolonged rest after the operation and applies a brace.

Jacobs advocates the Albee operation in cases in which conservative treatment has failed or the element of time is an important factor, believing that the method represents a great advance in the treatment of Pott's disease except in early childhood. He believes that a callus firm enough to stand the great longitudinal sliding strain in these bone grafts needs many months for its development. He thinks fixation in a jacket or brace should be maintained for six months or more.

Rosenow has failed in only three out of thirty-eight cases of "arthritis deformans" to isolate organisms from glands draining the affected joints. In fourteen cases he found streptococci, in nine a peculiar staphylococcus-like organism at first completely or partially anaerobic, in nine the bacillus Welchii, in three staphylococci, in one the bacillus mucosus, in one the gonococcus. The author states that "there is often great sensitiveness of the patient to injection of killed organisms (autogenous vaccines) isolated from these glands and marked improvement may follow the injection. These facts in conjunction with the affinity of the organism for joints and muscles of dogs and rabbits after intravenous injections would seem to leave little doubt that the bacteria found in the glands draining the joints in arthritis deformans are the actual cause of the disease." He attributes part of the joint changes to the shutting off of the blood supply of the joints by the plugging of the vessels from endothelial proliferation induced by the organism. This possibly is further suggested by the experiments of Axhausen, who produced the gross and microscopic changes peculiar to arthritis deformans by ligating the blood-vessels supplying the structures of certain joints in dogs, and by the later work of von Manteuffel, who, following the work of Rudnicki on the soft parts, produced artificial sclerosis of the vessels and changes in the articular ends of the bones by freezing and congestion. In these experiments of von Manteuffel there was finally complete disappearance of the cartilage and of the entire joint with connective tissue ankylosis of the two bones.

Hastings, realizing that cultures from the blood, joints, and possible

one cannot be made in all of a series of cases, and that no one of these would be considered as a determining factor in all cases, has chosen the complement fixation test as a means of determining the bacterial cause of the "chronic infective deforming arthritis." Hastings's observations cover some 75 cases. Forty per cent. of these reacted only to the complement fixation test for streptococcus viridens; in others the gonococcus, Wassermann, and other fixation tests were positive. He considers it very rare that the manifestations of "arthritis deformans" are due to gonococcus.

Thalhimer and Rothschild produced an arthritis in half the rabbits they injected with streptococcus mitis. In character this arthritis was similar to the process caused by the micrococcus rheumaticus. They think that it is evident that an arthritis can be produced experimentally by blood inoculations of various streptococci and micrococci of the less virulent (non-pyogenic) group, but that evidence is still lacking that any distinct variety or species of streptococci is the specific cause of arthritis, at least in rabbits.

Moore has studied the action of vaccines and concentrated antistreptococcus serum in experimental streptococcal arthritis in rabbits, and while there are yet too few cases for any conclusions, the work is suggestive. Moore's experiments were stimulated by the fact that antistreptococcus serum has not been altogether satisfactory, and he desired to find out whether in the presence of certain antibodies the serum was of low potency; hence the trial of the concentrated sera. Concentrated serum does not appear to have any effect on acute arthritis, though it may act as a prophylactic against further experimental infection and it may produce an immunity of from one to two months.

Greeley writes rather positively concerning the cause, and very optimistically concerning the treatment, of "chronic rheumatism." He considers it is experimentally proven that the introduction into an animal of a parasitic organism whose virulence is nearly balanced with the host's power of resistance frequently results in the establishment of chronic foci of infection in locations not reached by the blood plasma and leucocytes in full concentration. He believes that pathologically the lesions of chronic rheumatism occur in this way where the circulation is at a minimum in the arteries in the ends of the bones. He considers that the results in fifty-three cases which he has treated by means of autogenous vaccines have been satisfactory. He obtained the vaccine five times from the blood, fifteen times from the urine, and thirty-three times from the throat; the latter source he considers to be always satisfactory except in gonococcal infection. The vaccines should be autogenous and should never be given in acute cases. The size of his dose (which does not seem to be necessarily exact) is from one hundred million to one billion, not oftener than once in eight to ten days. He believes implicitly in the future of this treatment.

Brackett's paper on arthritis associated with lesions of the genito-urinary tract is based on a wide experience, and his analysis of types and treatment seems to be clear and sound. He believes the responsible organism to be either the gonococcus or the colon bacillus. The gonococcal infections are of two types: One, usually monarticular, in which there is a direct bacterial invasion of the joint characterized by an arthritis of sud-

den appearance, giving evidence of very acute synovial inflammatory involvement. This process later shows an inherent tendency to marked contractures with strong adhesions and destruction of articular cartilage. In the acute stage the organism may at times be recovered from the joint. The second type is polyarticular and of a mildly inflammatory nature, slowly damaging the joints from toxic infection. This type may develop with an entirely quiescent external urethral condition. Arthritis associated with colon bacillus infection of the genito-urinary tract is of a severe persistent type of multiple distribution, having a predilection for the larger joints and frequently for the spine. The treatment in the acute type of Niesser infection should be directed toward the urethral focus and also toward the joint condition. This later requires often radical treatment: in the early stages hot salt solution lavage through a small incision and a subsequent drainage. The later stages of these cases offer ideal conditions for inflation with 4-per-cent. iodoform oil. In the toxic types of gonorrheal infection and in the arthritis of colon bacillus origin the treatment after search for and elimination of the focus should consist of measures aiding the absorption of exudates, improving nutrition, and favoring the return of motion.

Manning and Fassett report a case showing a typical clinical picture of Still's disease with small palpable glands in the cervical, axillary, and inguinal regions, in which carious teeth and a chronic otitis media were apparently the causes of the arthritis. Under general hygiene and the removal of the supposed sources of infection the condition rapidly improved. The case seems to be one more proof that Still's disease is an infectious or toxic arthritis.

O'Malley draws an interesting analogy between otosclerosis and arthritis deformans, meaning evidently the osteoarthritic, hypertrophic, or degenerative type. He reaches the conclusion that they are due to the same cause: "The essential factor underlying the morbid changes (in both diseases) is a chemical one affecting the nutritive stability of developing and fully developed bone and cartilage comparable to the rachitic phenomenon, but how these chemical disturbances are actually initiated it is at present not possible to explain."

Robert Jones has reviewed in his characteristically helpful manner the surgical treatment of poliomyelitis, emphasizing the important principles which should form the basis for all orthopedic treatment. Perhaps the most essential factor is the possession by the surgeon and patient of "boundless spirit and buoyant enthusiasm." In his description of his operations for correction of position and restoration of function in the paralyzed member by tendon transplantation, etc., he is most explicit, and one feels that no detail of technique is too small to be most carefully carried out.

Artificial ligaments and tendon fixation, especially the latter, he believes to be of great usefulness, not only because they improve function by maintaining a better position, but also because they allow overstretched but not completely paralyzed muscles to regain some degree of power.—*Therap. Gazette*.

ENTEROCLYSIS BY THE DROP METHOD IN THE TREATMENT OF TYPHOID FEVER.—Paul Emile Weil, in *Bulletins et mémoires de la société médicale des hôpitaux de Paris*, February 25, 1915, strongly recommends the daily

intrarectal administration to typhoid patients of one quart (one litre) of boiled water to which one and two thirds ounce (50 grams) of glucose or cane sugar have been added. The method is advised not only as an easily employed substitute for the customary cold bath treatment, but as being actually superior to it in the results obtained. The solution to be introduced is placed in the receptacle at a temperature of 104 to 122 degrees F. (40 to 50 degrees C.) and the flow so regulated that about sixty drops enter the bowel a minute. The receptacle should be placed at an elevation of about sixteen inches (40 cm.) above the patient. Each administration should take about three hours, or possibly, four hours. Epinephrine was sometimes added to the solution in cases with heart weakness, chloral hydrate in the delirious, and hexamethylenamine in those with gallbladder complications. The sugar solution, thus administered in hundreds of cases, uniformly caused rapid improvement in the general condition and diminution of the signs of infection. In patients admitted with a dry, parched tongue this organ became thoroughly moist after one or two treatments. Prostration was greatly reduced, ataxic symptoms were quickly overcome, and delirium was subdued. A characteristic effect on the temperature was noted, the range forming at first a plateau of about 102.2 degrees F. (39 degrees C.), then fluctuating and dropping, often abruptly, down to normal, sometimes in the space of two days. The treatment was continued until the patient had been afebrile two days, earlier discontinuance being followed by return of fever. The pulse rate, even in complicated cases, was brought down to 100 and remained there throughout the course of the disease. Even where capillary bronchitis had become superadded to the typhoid fever, the temperature and pulse remained relatively low, and dyspnea was prevented. The urinary output was markedly increased and albuminuria caused to disappear by the treatment. The number of stools was apparently diminished. No contraindication to the method is recognized save intestinal hemorrhage; as soon as the bleeding ceases, enteroclysis should be practised as usual. The duration of the disease was much shortened by the treatment and the complications were rendered less frequent, milder, and less persistent. The patients entered upon convalescence with less prostration and emaciation than is usual in the disease referred to. The few patients who succumbed among the hundreds of cases treated had been admitted in a desperate condition and remained under observation but four or five days.—*N. Y. Med. Journal.*

DIAGNOSIS OF TYPHOID FEVER IN INOCULATED SUBJECTS.—By George D. Dawson.—It was found that a certain strain of *Bacillus enteritidis* isolated by Delepine gave an agglutination reaction quite constantly—in forty-nine out of fifty cases—with the serum of typhoid patients. It was also discovered that the serum of persons who had been inoculated against typhoid fever always failed—fifty cases—to give such agglutination, although most of these serums gave a typical Widal reaction against *Bacillus typhosus*. These observations led Dawson to try the agglutination of this enteritidis strain in fourteen cases of suspected typhoid fever in inoculated men. Seven gave strong clinical evidences of typhoid fever and the agglutination was positive in all. *Bacillus typhosus* was isolated from the blood or stools of four of these cases; the remaining seven were much more doubtful clinic-

ally and in none did the serum give an agglutination of the enteritidis. From these results Dawson concludes that the agglutination of the particular strain of *Bacillus enteritidis* was strong evidence of the presence of typhoid fever. The test was of value in determining or excluding the presence of typhoid fever in inoculated subjects, and a single negative test did not exclude typhoid fever, although if this occurred late, the evidence against typhoid was strong.

LATE RESULTS OF ARTIFICIAL PNEUMOTHORAX.—By R. Burnand.—The ultimate value of the effects obtained in pulmonary tuberculosis through artificial pneumothorax is discussed. In a hundred cases a few had immediate benefit; in some a permanent cure resulted. In one case, for example, that of a young man suffering from rapidly advancing tuberculosis with caseation, not benefited by two months' careful treatment in a sanatorium, nitrogen insufflations were followed in three weeks by a return of the temperature to normal. In ten months the patient was able to leave the sanatorium and resume his customary occupation. Nitrogen insufflations were continued for fourteen months longer. Five months after the interruption of treatment the affected lung showed normal expansion and breath sounds except at the apex. The patient soon after began active military service and has since remained well in spite of arduous duties performed in a mountainous country. Burnand enumerates the following as the three chief causes of failure in artificial pneumothorax: 1. Independent progression of foci existing in the other lung before the treatment; 2, tuberculosis coexisting in organs other than the lungs; 3, firm pleural adhesions preventing complete collapse of the lung under treatment. Excluding these three particular difficulties, no important obstacles in the successful practice of the method remain, and the chief requisites in obtaining permanently good results are: 1. Improved technic; 2, an ability to discern the precise moment at which, while a case is doomed to a fatal ending under ordinary treatment secondary tuberculous foci in other structures, as possible sources of subsequent grave relapse, have not yet developed. —*New York Med. Journal*.

A FEW SUGGESTIONS AS TO TREATMENT OF A DIABETIC PATIENT.—Blum in the *Medical Record* of April 24, 1915, says that diabetics in general may be classified under three headings: (1) The mild type, in which it is comparatively easy to rid the urine of glucose by means of a suitable diet and a limitation of the intake of carbohydrate food. (2) The intermediate, in which the urine can with more difficulty be rendered sugar-free, viz., by also limiting the intake of protein food; in this type of case the urine at times, no matter what the character of the diet, will contain a slight trace of glucose. (3) The severe form, in which both restrictions or withdrawals of proteins and carbohydrates will not render the urine sugar-free.

In beginning treatment place the patient on a regular diet containing a normal amount of carbohydrate food for three days, and from three daily specimens of a twenty-four-hour urine get the average percentage of glucose content. If the case is not one of the severe form, or in cases in which there is no evidence of any serious complication or danger, in which a further reduction in weight will prove disastrous, or in cases in which

there is no existing severe glycosuria and polyuria or marked acidosis, the following test diet is used. It differs but slightly from the usual test diets employed by others:

<i>Breakfast:</i>	Calories
Cup of coffee or tea with 2 oz. cream.....	100
$\frac{1}{2}$ lb. ham with one egg.....	1125
1 oz. butter	220
<i>Lunch:</i>	
Two eggs in any form prepared without flour and with butter.	200
$\frac{1}{4}$ lb. meat, vegetables	400
$\frac{1}{2}$ oz. full cream cheese	50
Small cup coffee, glass table water.	
<i>Dinner:</i>	
Soup prepared with an egg	90
$\frac{1}{2}$ lb. meat containing large amount fat, or $\frac{1}{4}$ lb. meat and	
$\frac{1}{2}$ lb. fish with plenty of butter sauce	950
$\frac{1}{8}$ lb. vegetables, cup coffee with 2 oz. cream.....	110
<hr/>	
Total	3245

On the first day, in addition to this diet, two slices of ordinary wheat bread are given; on the second day one slice, and on the third no bread at all. As can be seen, this diet contains a very much larger number of calories than a person weighing 150 pounds would require in the course of twenty-four hours under ordinary exercise. The vegetables allowed are cucumbers, tomatoes, canned asparagus, green asparagus, spinach, lettuce, canned string or little green beans, canned haricot and wax beans, canned okra and Brussels sprouts. All of these contain an average of less than 4 per cent carbohydrate, and some can be employed in the preparation of salad. Since the vegetables are taken in such small quantity, the diet for all purposes might be regarded as being carbohydrate-free.

If the case be not one in which the diet is contraindicated, the patient should be kept on this as long as possible up to a period of two weeks; if he is doing well on the diet, even longer. During this time a careful watch must be made of the urine. Acetone and diacetic acid will invariably be found, in cases even in which it had not been present before the test diet had been given. During the interval that the test diet is being given the weight will diminish from three to ten pounds in a patient weighing 150 pounds. The patient as a rule will become sugar-free and the polyuria will diminish.

At the time the test diet is begun it is well to begin the administration of bicarbonate of soda in doses sufficiently large to render the urine alkaline, and also as a preventive to acidosis. A half-ounce a day in divided doses is sufficient. Four parts of this combined with Rochelle salts, one part, serves a double purpose.

The longer this test diet can be kept up without the patient suffering too great, loss of weight the greater will be his carbohydrate toleration, and

the better the prognosis of the case. To calculate the toleration for carbohydrate wheat bread in one-ounce slices is added slowly to the test diet in increasing amounts until the urine begins to show traces of glucose. Since wheat bread averages about 57 per cent carbohydrate, a diet which will be more or less permanent can easily be arranged by substituting other carbohydrate food in place of some of the bread, if desired, the total carbohydrate content not to be any greater than the total amount represented by the patient's toleration for wheat bread; rather is it better to allow it to contain an amount just below the toleration point. In mild cases a diabetic is usually able to tolerate 100 grammes of carbohydrate daily, and if a portion of this is represented by wheat bread a very liberal diet made up of different foods containing the lesser amounts of carbohydrate can be taken.

Nearly every mild case of diabetes can be controlled by diet alone, the patient becoming stronger and feeling better; the pains which are present in the calf of the leg in a majority of cases disappear entirely after the urine has been kept sugar-free, the polyuria gradually ceasing, the weight no longer diminishing.

In cases in which there is a deficiency in the amount of urine excreted, citrate of potassium is of service; this also may be combined with the sodium carbonate along with the Rochelle salts if the latter is required.

A very important symptom needing attention in diabetics is constipation; in some of the cases this alone is responsible for an accompanying acidosis. The use of Rochelle salts or a mild aperient water in sufficient dose to produce a laxative effect is all that is required to correct this tendency.

The skin of a diabetic needs careful attention; the use of a bland neutral soap and an occasional douche in addition to frequent bathing will tend to ward off any serious trouble.

Exercising of the musculature of the body should be insisted upon, as by it glycogen is consumed, the patient is benefited, and waste products are eliminated. Almost any form of exercise may be indulged in unless there is a contraindication present in one of the vital organs.

The great tendency for diabetics to possess a somewhat neurotic temperament makes it incumbent upon the physician to divert from the patient's mind anything that may exert a harmful influence. Too frequent examination of the urine should not be encouraged if the case is progressing satisfactorily, and no one but the physician himself, if he is able, should examine the urine; if examinations are made at a reputable laboratory, reports should be sent to the physician. It has been shown that even though diabetes cannot be caused by a neurotic temperament, the glycosuria is influenced by the latter to a marked extent.

As regards medicinal treatment, the author has not had any experience beyond the use of arsenic in the mild cases in which diet alone was not enough to prevent the glycosuria; it is usually unnecessary to go beyond the sphere of diet. In cases in which it is necessary, Fowler's solution to the point of tolerance is a valuable adjunct.—*Therapeutic Gazette*.

THE USE OF DAHLIA IN INFECTIONS.—To the *American Journal of the Medical Sciences* for May, 1915, Ruhrah contributes an article on this topic. He tells us that about two years ago in searching for an efficient

local application for streptococcic infections of the throat, Dr. Charles Simon suggested the use of dahlia. The writer started this as a local application, beginning at first with weak solutions, and he soon found that the saturated, that is about 4 per cent, solution could be applied to the mucous membranes of the throat or in fact other parts of the body without producing either pain or subsequent irritation. The drug seems to penetrate only to short distances, and for the deeper seated affections has no value, but for superficial involvement of the mucous membranes, whether the infection is due to streptococcus or to other organisms, the effect is quite striking. In some cases but little effect is noted, it is true, but in others there is marked lessening of the intensity of the inflammation and coincidentally a reduction of the constitutional symptoms. It has the advantage over other applications in that it is not painful, does not produce irritation, and is markedly antiseptic. The only disadvantage is the color, which, of course, will stain fabrics with which it comes in contact, although most of these stains can be removed if the garment is immediately washed out in cold water. For ulcerations about the mouth it may be used either by applying a saturated solution or a mouthwash varying in strength from 1 to 1000 or 1 to 10,000 may be used. The stronger solution need not be used very frequently.

The dahlia not only kills the offending organism, but it has a marked stimulating effect upon the healing. Externally upon skin surfaces the drug may be used with marked benefit, particularly upon ulcerations. The writer has used it with remarkable benefit upon vaccinations which were slow in healing, and upon other abraded surfaces, especially those which are infected. He has not had an opportunity of using it in erysipelas, but Dr. Louis P. Hamburger, of Baltimore, and Dr. T. B. Johnson, of Frederick, have used it in a number of cases, with the most satisfactory results. Dr. Johnson informs the writer that he has used it with remarkable success in both acute and chronic eczema, in herpes tinea tosurans, and furunculosis. In one resistant case of tinea sycosis in which the whole surface of the beard was tremendously involved, the patient was cured after five or six daily applications. It may be used with reasonable hope of success in skin lesions caused by or accompanied with pus organisms.—*Therapeutic Gazette.*

CASEIN MILK FEEDING.—Walter Gelhorn M. D.—Seattle, reports as follows on "Casein Milk feeding in infancy and Childhood" in the *Jour. Ama.* Sept. 4, 1915. Volume lxxv page 853.

The Report is based on the observations of 163 children. The following modification, made from 4 per cent. milk and used almost exclusively for the cases reported, does not represent more than an adaptation of their teachings to my material:

- 17 ounces of skimmed milk (skimmed by dipper after two hours).
- 1½ ounces of cream (the first from the top).
- 17 ounces of water.
- 3 level teaspoonfuls sodium caseinate.

The mixture is boiled, if used therapeutically, and pasteurized if for rather prolonged feeding periods. It represents a skimmed milk to which 10 per cent. of cream and 2 per cent. of casein have been added. The calorific value, after addition of 5 per cent. dextrimaltose, amounts to about 440 calories per thousand c.c., and the tabulated comparison shows that it contains only half as much fat as albumin-milk, two thirds of its calcium and 0.8 per cent. more of lactose.

In case the relation between calcium and fat should be unsatisfactory in an individual case, additions of calcium lactate will prove of assistance; as much as 5 gm. per day have been given. The additional sugar used was dextrimaltose (from 1 to 7 per cent.) in private practice and granulated table sugar in the County Hospital, the latter without apparent bad results. In practically all the cases barley or oatmeal water (1.5 per cent.) was used in place of water.

Following Feer's advice, the attempt was made, and usually with success, to reach the full amount inside of ten days, that is, 100 c.c. of skimmed milk with 10 c.c. of cream and 2 per cent. of sodium caseinate per about 2 pounds of body weight. In the majority of cases, the increase of fat to 2 and 2.5 per cent. of the total mixture was started at first after that time, but some children required a higher percentage of fat sooner. In severe cases an addition of sugar was not started before the third or fourth day. According to the case, a water period from six to twenty-four hours accompanied by an enema and castor oil preceded the administration of the milk.

In successful cases the diarrheic stools became formed inside of a few days, frequently even after twenty-four hours. The alkaline movements resembled buttermilk stools. The appearance of very hard stools was an indication for an increase in fat and sugar.

It was characteristic in favorable cases that the formerly very restless children became quiet and appeared happy even at a time when the food supply was quite insufficient. The initial loss in weight was comparatively small in the majority of children. Among the great number of children, kept on this food for considerable time, only one case of infantile scurvy developed. The child was raised on this modification until 8 months old, when it began to refuse anything but the milk for several weeks, and was easily cured by forced feeding of vegetables and fruit juices.

CONCLUSIONS

1. Casein-milk feedings have been found to be successful as temporary food in *allaitement-mixte* and whenever it was necessary to wean a very young child abruptly. Although they do not seem to produce any harm during prolonged use, the advantages they offer are not sufficiently clear to recommend their substitution for the ordinary milk modifications in normal children.

2. They cannot replace breast-milk in some of the severest cases, but in the great majority of nutritional disturbances, as seen in private practice, they will be found to be of assistance. They are indicated in disorders of a fermentative origin, and can be fed here in rapidly increasing doses regardless of the stool picture, provided the child does not develop symptoms

of alimentary intoxication. Through their use may be avoided the prolonged or repeated therapeutic hunger periods with their deteriorating influence on the child's organism which are so frequently the cause of turning an originally mild into a serious disorder.

EYE WOUNDS IN WAR.—Darien mentions that after eight months of fighting, the importance of eye injuries can be realized. At first the lower limbs were most often struck, but in trench warfare the head is more exposed than the rest of the body, and so eye injuries have increased from five to thirteen per cent. Wounds from bullets, shell and shrapnel are much more numerous than from bayonets and sabres. The worst are the shell injuries, as high speed bullets sometimes penetrate without much damage. There is no field service in ophthalmic work. All cases are sent to Paris, but the worker hopes, when operation becomes more mobile, to have a service of ophthalmic surgeons with the vanguard. He then enumerates the principal injuries thus far observed, amplifying several more interesting ones. In explosions of shells at close range, the force of the wind alone can produce lesions, as rupture of the tympanum. The men are thrown down unconscious with amblyopia or severe amaurosis. Most often the reflexes produce hemorrhage of the retina or vitreous and the prognosis is grave. Three cases of traumatic cataract were observed.

Extraction of intraocular foreign bodies is usually impossible because the fragments are nonmagnetic—in the majority of cases enucleation is performed.

A case of nicotin amblyopia was observed in a captain who had not slept for three nights during the retreat of Charleroi and, from fatigue and hunger had smoked incessantly. A surgeon became infected with pus of a gangrenous abscess while operating and developed a severe iridocyclitis which, however, responded to energetic therapy. He examined before and after trephining many skull fractures, with monolateral or bilateral choked discs.

A case of aphasia and agraphia was cured by trephining on the side of the swollen disc. There was a case of cortical blindness of both eyes following the passage of a bullet through the calcarine fissure.

First aid by the general surgeon should consist of as good asepsis as possible; a soft bit of firm protective dressing, an injection of morphine and two or three anti tetanic serum treatments. The sympathetic ophthalmias, so frequent in war, are not seen during the early days. Then the case can be referred to an oculist at the central service, and, where the eyes cannot be saved, enucleation is the best treatment and artificial eyes given early. In eight months Darien has not observed a single case of sympathetic ophthalmia because the above regime was followed.—*La Clinique Ophthal.*

WM. SPENCER, M. D.

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FIFTY-SECOND SESSION

GLENARD'S DISEASE.

BY

WILLIAM B. VAN LENNEP, A.M., M.D., F.A.C.S.

By Glénard's "enteroptosis" is understood not only, as the word implies, a prolapse of the intestines, but rather a splanchnoptosis, or a sagging of any or all the organs attached to the dome and walls of the abdomen. Thus, we may have a nephroptosis alone, which, aside from its own symptoms, may encourage stasis by pressure upon the caecum and the ascending colon, or appendicitis by interfering with the flow of blood through the superior mesenteric vein; or again, a gastroptosis with the liver in place, when the ligaments by which the stomach is suspended are stretched and attenuated. If coloptosis does not coexist, the gastro-colic omentum is short, thick and fat, but the transverse colon must before long be depressed by the falling stomach, forming, instead of a horse-shoe arch, a festoon hanging down around the greater curvature. In consequence, kinks form at either flexure, the gut becomes loaded with stagnant faeces which, sooner or later, produce a colitis, symptoms of autointoxication and, by their weight, pull out the gastro-colic omentum until it is as thin as paper and even perforated in spots.

The influence of the liver in depressing the right kidney is well known and we can recall but a couple of instances of double "wandering kidney" and none of the left one alone, except of traumatic origin. This depression of the liver is usually due to corset pressure and tight lacing, for splachnptosis is essentially a disease of the female, and it may go on to the degree of producing a true hepatoptosis or "loose liver."

Glénard's theory that these ptoses are caused by malnutrition, inducing laxity of the ligaments and of the abdominal walls, appears to be refuted by the fact that once we can replace and fasten or hold the fallen organs in their normal position, nutrition improves immediately and permanently, whereas the "rest and fatten" treatment is followed by relapse, as soon as the patients get up and about.

While Glénard of Lyons described the disease that bears his name over thirty years ago, it is only recently that it is coming to be generally understood and properly treated. This has been partly due to confusion in diagnosis, notably with gastric ulcer, constipation with colitis, or when these have been found to be wrong, nervous dyspepsia, or the makeshift, neurasthenia. Skepticism regarding the results of these conditions is also fostered by the fact that many patients with considerable ptoses enjoy comparatively good health, aside from a moderate constipation, and, on the other hand, many believe that slight degrees of ptosis may be one of the causes of the very common constipation in women. Again, the recognition of these conditions has been materially aided by improved diagnostic methods, such as, Roentgenography and the living pathology developed on the operating table. These have not only demonstrated the lesions themselves, but have also brought to light others, producing somewhat analogous results, and known as Lane's kinks, Jackson's membranes and a number of distorting bands: congenital or inflammatory. Finally, many surgeons have hesitated to operate in cases of ptosis of the stomach and colon, because the results have been so uniformly unsuccessful. I am free to confess that until recently, since I have been able to thoroughly try out an operative technique shortly to be described, I have confined myself to fastening the kidney and have declined to touch the organs just mentioned. The same is true of a "loose liver" in the presence of which nothing will hold up the stomach and colon.

The subjects of Glénard's disease have been very justly divided into two types, the *virginal* and the *maternal*. The former, the less frequent class, occurs in rather young women who have not borne children. They have been slender, but healthy during childhood, the trouble appearing soon after puberty or the inception of corset life. Their menses are usually scanty and painful, or even absent, and they frequently develop a train of nervous symptoms suggesting the diagnosis of hysteria. Before long they begin to suffer from a cardialgia after eating, with nausea and vomiting, progressive constipation, amounting even to obstipation, which may resist the strongest purgatives, and, sooner or later, they naturally become emaciated, languid and listless.

These patients present a characteristic physical picture: the chest is long and slender and its soft delicate walls appear to have been compressed; the rib-border recedes very gradually from the median line on either side, producing an epigastrium, not like the normal broad, inverted V, but rather like an inverted Y, the tail forming a long narrow fissure running up to the ensiform process. In contrast with the above, the pelvis appears abnormally broad and the lower abdomen rather plump from the presence of the prolapsed stomach and colon. The abdominal walls, however, are smooth, firm, tense and hard to feel through. The upper abdomen naturally is sunken, because empty and aortic pulsations can be readily felt. When the patient lies down, especially if the hips are raised, the epigastrium fills up and the pulsations disappear. If the narrowing of the lower aperture of the thorax is considerable, or if the transverse colon is much engorged with faeces, the stomach will not slip back into place, the epigastrium will not fill up and the pulsations will persist.

Finally, a radiograph, after a Bismuth or Barium meal, will show sagging of the stomach and transverse colon of a varying degree and a gastro-colic omentum of varying breadth.

The stomach itself will be of the "fish-hook" form, long drawn out on the left and then rising to join the duodenum at a rather sharp angle. Such angulation may produce "atony" (delayed emptying) and is one of the reasons for the incorrect diagnosis of ulcer with its consequent pyloric stenosis. It might be said right here that gastro-enterostomy has been performed for gastroptosis on this supposition, but without any relief. Ulcer and its stricture may however coexist and,

in fact, the kink and the ptosis rather encourages its development. Under these circumstances gastro-enterostomy would be indicated, but should always be combined with a gastropexy.

The same dragging that elongates the cardiac end of the stomach, referred to above, is responsible for the pain (cardialgia) and drawing sensations which come on after eating, when standing, or after walking about, and they are induced by traction on the diaphragm stretching the subperitoneal plexuses of nerves.

Such a cardialgia also suggests ulcer, but it is constantly to the left, not radiating thither from the right and is not affected by the *quality* of the food, as in ulcer, but by the *quantity* of the same. Finally, while hyperchlorhydria may occasionally be present in gastropsis, there is no blood in the vomit or stool, occult or macroscopic.

In long-standing, aggravated cases of this kind there develops at times a cachexia which is not unlike that of cancer and is due to the pain after eating, the vomiting of everything taken and the intoxication from faecal stasis. The presence of normal or increased hydrochloric acid, the absence of the cancer tests and of pyloric stricture, together with the characteristic radiographic picture, should enable us to arrive at a correct diagnosis in most cases without exploration.

A remarkable result after the successful elevation and fixation of the prolapsed stomach and colon is the fact that patients can at once eat without pain or vomiting and that the bowels begin to act spontaneously, when before, even the strongest purgatives had proved ineffective. Another result seems to be the regulation of the menstrual function, operation being quickly followed by normal menstruation which might previously have been irregular, painful, scanty, or even entirely absent.

Without going into the details of operative technique, it might be said right here that these are the cases for surgical measures; belts and bandages are of no avail and only tend to increase the rigidity of the abdominal muscles and still farther cramp the cavity. In this day of women enthusiasts in golf or tennis, the practitioner should bear in mind the fact that active exercise also stiffens up these muscles and should advise girls with this tendency and of this type accordingly. Rest in bed, flat or in an inverted position, with proper diet and laxatives, will relieve some cases, but they relapse and

are worse than before, once they get up and about. Furthermore, statistics show an operative mortality of but 2 per cent, including the worst cases of this depressing disease, and fully 75 per cent of complete and permanent, resultant cures, and this too, in cases of constipation obstinate enough to call for such severe and dangerous operations as colectomy and ileo-sigmoid anastomosis at the hands of their advocates.

The *maternal type* is by far the more common, develops later in life and in women whose abdominal walls have been repeatedly stretched by pregnancy at short intervals, or those who have presented conditions producing similar results, with similar subsequent collapse, plus the malnutrition dependent on the same: tumors, cysts, ascites, etc.

The abdominal muscles, an elastic belt so to speak, become lax, thin and flabby, the "air cushion" made up of the more or less inflated intestines falls away and the unsupported liver, stomach, transverse colon and one or both kidneys tug away at their moorings until these give way and a prolapse of varying extent, sometimes extreme, develops.

The patients of the *pregnancy* class are usually healthy and robust as girls, both before and after puberty. After several quickly repeated child-births, they will begin to suffer from indigestion and constipation, with a sinking sensation as if the abdominal organs were dropping down. They will have gastric pain after eating and occasionally vomiting, the former being brought on also by standing or walking about and disappearing when they lie down, particularly on the back; distress is felt, however, on the opposite side when they turn to one or the other. In a goodly number of cases there are no morbid symptoms excepting constipation.

Physically, these women are usually well built and fairly nourished. The thorax is of normal size and shape, the rib-borders flaring quickly, leaving a wide epigastrium. The skin and muscles are attenuated and flabby, often with a separation of the recti, permitting one to push the fingers between them, and palpate the vertebral bodies. When they lie down, the abdomen spreads out on every side and is concave in the centre; when they stand up, it drops down like a partly filled bag, the flanks and epigastrium sink in and aortic pulsations are palpable. The reason these patients present fewer symptoms than those of the virginal type is probably because, in the latter, the tense abdominal walls cramp the organs so that

they cannot adapt themselves to the prolapse, whereas, in the maternal class, the lax, flabby walls give ample space for the same.

One possible complication in these cases deserves a passing mention, and that is that the mobile intestines, notably the colon and sigmoid, with their lax mesenteries and overloaded lumina, are readily twisted, producing volvulus.

The treatment of this type is the reverse of the preceding one: operation is practically never indicated, except for complications or for a single condition, such, for instance, as the kidney. Rest in bed, temporarily if at all, with the application of a well-fitting binder to stiffen up the "elastic belt" and hold up the supporting intestinal "air cushion," are usually sufficient to relieve all the symptoms. Such a belt should be so constructed that all lacing and strapping can be done from the front, and it is a pity that all binders are not made in this way, permitting of its application in the supine position or even with the foot of the bed or couch elevated, to cause the prolapsed organs to slip back into their normal position.

When we come to consider the operative treatment of Glénard's disease, it may be said that, as regards the kidney, we have in the method devised by Edebohls and accidentally found useful in nephritis, namely, stripping the renal capsule and the aponeurosis covering the quadratus lumborum muscle and suturing together the two raw surfaces, a most satisfactory operation and one that has given us uniformly permanent cures. In the incision of Mayo, coupled with resection of the twelfth rib, we have the easiest and largest possible access to the kidney, whether it be enlarged or of normal size.

No mention has been made of the spleen because we have never met with the loose organ in connection with a general ptosis, unless it was enlarged, and such increase in size has always been present when the "wandering spleen" has been the only morbid condition. We have treated such cases by excision, by incising the parietal peritoneum and closing the opening after tucking the organ into an extra-peritoneal pocket, or by attaching the spleen to the abdominal wall, after scarifying the visceral and parietal serosa, by means of a loop of heavy silk thread passed around it, from without in and out again, the two ends being tied on the outside: this can be left in place for several weeks, when the adhesion will have become firm and permanent.

It seems perfectly reasonable that with the abdominal ptoses we have been considering, there should coexist a sagging of the pelvic organs, notably the uterus. Unfortunately, this association is often overlooked and it is not unusual for us to find that the uterus has been fixed or suspended without relief in patients suffering from gastro-, colo-, or even nephroptosis. Every case which suggests laxity of the abdominal contents should be submitted to an X-ray examination, should be carefully palpated for a movable kidney and percussed for a depressed liver.

In dealing with ptoses of the liver, stomach and transverse colon, it is necessary to have a procedure that will not only elevate and hold each of the organs in place, but also one that will give us the assurance that such fixation will be strong and permanent, and this the operations hitherto practised have failed to do in one or more particulars.

Duret's method, the pioneer operation, fixes the stomach alone with a single suture and that along its lesser curvature which it puckers by being tied in the median line and interferes, besides, with the motility of the pylorus and antrum.

Beyea, as well as several others who simultaneously devised the operation which generally bears his name, shortens the gastro-hepatic omentum by plaiting, but this structure is often so attenuated as to preclude its use and, besides, a sagging, overloaded colon will ultimately pull it out again, even if it has been successfully shortened.

Coffey attaches the greater omentum to the anterior abdominal wall, forming a hammock consisting of this structure, together with the transverse colon and its mesentery, on which the stomach is to rest. Unfortunately, the omentum is not always strong enough to support a full stomach and the epiploexy cannot always be carried out throughout the entire breadth of the omentum, so that the stomach is apt to tumble out of its sling, particularly to the left.

Aside from the defects just mentioned, none of these methods raise or fasten the liver which would appear to be the first rational step in replacing three falling organs of which it is the uppermost, and, in one case at least, the loose liver has prolapsed across the pyloric portion of the fixed stomach and produced a fatal obstruction.

Rovsing of Copenhagen has devised and practised, both extensively and successfully, a triple procedure by which to

raise and hold in place the liver, the transverse colon and finally the stomach. We have been much impressed with the favorable results we have obtained by his operation and feel no hesitancy in recommending and practising the same.

The *hepatopexy* is carried out as follows: The peritoneum covering the liver and diaphragm are scarified with a needle or scalpel, or by briskly rubbing it with a gauze mop. Several mattress sutures are next passed through the capsule, close to the free border of the liver, by means of a blunt needle and then through the under surface of the diaphragm, as high up as possible, with a sharp needle, when they are tied, after carefully adjusting the two surfaces. We have found difficulty at times in applying these sutures which will tear out of a thin capsule and the reliability of their support has seemed somewhat problematical, even though prolonged rest in bed, in an inverted position, be used to encourage firm adhesion of the scarified surfaces. For this reason, we have been much pleased with Rovsing's plan of using the round ligament to hang up the liver: This is divided between ligatures and the upper portion is fastened to the diaphragm by passing the two ends through this structure and tying them. The latter suture should be of non-absorbable material. The liver is thus firmly suspended by this solid, strong cord.

The next step is to raise the colon and this is done while the stomach is lying outside the abdominal wound. A row of strong, catgut sutures are placed, starting in the colon, passing in and out through the gastro-colic omentum which is held up to the light to avoid injuring its vessels, and then picking up the wall of the greater curvature, to return in like manner to the colon near the starting point. Four or five of these sutures are usually sufficient, the one farthest to the right connecting the pyloric end with the portion of the colon close to the hepatic flexure and the corresponding one on the left holding that nearest to the splenic flexure against the fundus. The result will be that instead of hanging down, to a varying distance like an inverted horse shoe, the colon is held up against the greater curvature by a narrow, thick gastro-colic omentum and the kinks at either flexure are straightened out.

In order to avoid Duret's single suture passed through the lesser curvature and tied in the median line, the results of which have already been referred to, Rovsing carries out the

gastropexy by the following technique which we have practised with slight modifications:

Three strong celluloid threads are passed in and out through the anterior wall of the stomach, each one parallel with the long axis and leaving the pyloric end free. The uppermost suture is just below the lesser curvature, the second about an inch below this and the third at an equal distance further down, or a little more than an inch above the greater curvature. To promote adhesions, the peritoneal surfaces which are to come together are scarified or rubbed with gauze and the suture ends are brought out through the abdominal wall, on either side, a couple of inches or more from the median line, or at a distance corresponding in all to the length of the suture in the surface of the stomach. Instead of tying the ends over a glass plate wrapped in gauze, we have drawn them together on either side and they have been allowed to remain in place for three or four weeks, by which time firm adhesion should have taken place.

In cases of aggravated virginal ptosis, the stomach will pop out of the wound as soon as the abdomen is opened on account of the vigorous walls which have been acting like a straight jacket. If it cannot be replaced into the constricted outlet of the chest, Rovsing has had recourse to a plastic separation of the recti, not unlike the method of lengthening tendons, but we have not as yet had occasion to try this measure. If even then the stomach cannot be pushed up into place without jamming, it may be fastened lower down, just as we attach the kidney to the quadratus lumborum muscle below the twelfth rib. This will not raise the colon, however, and, if it is found to be prolapsed, with an elongated gastro-colic omentum, with angulation at the flexures and consequent faecal engorgement, Lane's ileo-sigmoid anastomosis, or even his colectomy may be resorted to.

DISCUSSION.

DR. J. W. FRANK, Philadelphia: I want to say a few words on the report of the X-ray. The diagnosis of gastropotosis or enteropotosis or splanchnopotosis is readily made by the Roentgen ray, whether we have simply a ptosis of one of the organs or of all. Again, differentiation between the causative factors, whether the stomach may be enlarged or dilated, and possible ptosis due to ulcer or obstruction of the pylorus, or possibly

obstruction of the duodenum from adhesions around this area. This is readily shown by the X-ray following a bismuth meal. The presence of adhesive bands around the pyloric end of the stomach or the duodenum may be responsible for the condition; or perhaps it may be due to bands lower down, around the hepatic flexure of the colon, thereby involving the duodenum and pylorus. These are all readily discovered by the use of the X-ray. Malignant conditions, of course, exist in which nothing can be done; and with the X-ray, we can completely differentiate these conditions; so that I feel that in the use of the X-ray we have an agent with which to differentiate the causes of a displaced stomach, which is of great aid to both the surgeon and the internist.

DR. WALTER C. BARKER, Philadelphia: You all know that if you take a picture of the stomach, you can tell where it is. I had a number of cases referred to me for a diagnosis of possible malignant growth of the stomach—one, just before I left for this meeting. In that case, I found a ptosis. There was absolutely no ulcer. It was simply a large, dilated stomach, from the greater curvature down to the pylorus.

The trouble has been to know when to operate in these cases. Last year, I had a young girl suffering with this condition, and tried to get the surgeon to do something for her relief; but he merely took out the appendix, and she is now just as bad as she was a year ago and is going around among the different dispensaries. I am glad to hear that there is an operation suited to these cases and a surgeon who will operate on them.

DR. DANIEL F. MADDUX, Chester: I was glad to have the privilege of hearing this paper, and pleased to catch the note of optimism that the author sounded, in contrast to the rather pessimistic opinion that I know he entertained some years back, regarding the results. As has been the case so often in our profession, after the pathfinder discovers the way, safe and sound, there are likely to be many more follow him.

DR. NORMAN S. BETTS, Philadelphia: In regard to splachnoptosis or coloptosis, I should like briefly to recite a case that, on account of a complication, a symptom that, so far as I know, is rather unusual, may prove of interest. The patient was a woman who had had three children. Before the birth of the last child, she was in a serious run-away accident, and began to develop bladder symptoms. She was treated by one of the most eminent genito-urinary surgeons of New York City for

a long time, without any effect, and was examined by the Professor of Gynecology of one of the colleges of New York, who thought that she might have an appendiceal condition causing the bladder symptoms. I had just read a very good article on coloptosis, so I had the large bowel X-rayed. Coloptosis was found. An operation was performed, in which the transverse colon was fastened by fastening the flexure up onto the liver, and the omentum on the anterior abdominal wall. This relieved the bladder symptoms, and she has had no return of them. That is a rather unusual symptomatology of coloptosis. I can corroborate what Dr. Van Lennep says about the frequency of pelvic relaxation.

SURGERY OF ADENOIDS AND TONSILS IN CHILDHOOD.

BY

GILBERT J. PALEN, A.B., M.D., PHILADELPHIA, PA.

WHEN should adenoids or faucial tonsils be removed? This is a question which the specialist is called upon very frequently to decide. It is one which should be answered only after a most thorough subjective and objective local and general examination of the individual case. There must, in other words, be thorough co-operative work by the internist and specialist.

We believe that we have demonstrated, after long years of practice, that the removal of adenoids either in small or large amounts is indicated in any case; this even in infants. Our stand however as regards the removal of tonsils is quite different and especially is this so in young children. We strongly oppose the removal of faucial tonsils unless there is some distinct reason for their removal other than their mere presence and perhaps slight enlargement. We do not advocate their removal as routine measure during the performance of an adenoid operation. When a distinct reason for their removal can be found, our surgical measures are radical. In other words complete removal of the entire gland with its enclosing capsule.

Recurrent attacks of tonsillitis are not in themselves sufficient cause for the removal of the faucial tonsils. In the average case the tonsils between these attacks are perfectly normal and if the adenoids which are present are removed,

the vast majority of these children will cease to have their attacks of tonsillitis. We say this advisedly for we have had an unusual opportunity in having under our care a very large number of children in an orphans' home, so that we have been able to follow the results of our work over a period of years in each individual case. This is impossible with ordinary dispensary or hospital practice, and even in private practice, as the cases once operated are very seldom seen again and the results of the work cannot be followed. In a long series of cases operated, where adenoids alone were removed, the majority of these patients ceased to have attacks of tonsillitis and the small percentage which did have tonsillitis again could be traced most to dietary conditions.

If the tonsils which are removed from young children who have a history of tonsillitis are examined, the structures will be found normal in the majority of cases. It is only after the seventh to tenth year that the structure becomes permanently diseased. We do not wish to be understood that tonsils in children under ten years of age are not and cannot be diseased, but we do know that the vast number of tonsils which are removed would be found normal in structure if a careful examination were made. Again the removal of tonsils for enlarged cervical glands is not always followed by a reduction in the size of the glands as is expected. We believe that enlarged glands in children very frequently are due to the fact that at this period the milk teeth are being absorbed, or there are pus pockets in the carious teeth and the absorption from these cause a large percentage of cervical adenopathy of childhood. We have frequently seen these, so called tubercular glands, disappear after absorption of the milk teeth or after proper treatment of the mouth. Incidentally also an existing tonsillar condition has improved in many cases. Where the cervical lymphatics are due to tonsillar conditions, it is often possible to demonstrate locally in the tonsils a diseased condition.

We have stated that we believed in thorough removal of adenoids when present in any amount. Especially in the study and treatment of otological conditions are we impressed with the fact, that a small amount of adenoid tissue may cause quite as much trouble as a large amount, if the adenoid tissue is properly situated. It is also quite possible for a child to have

a large amount of adenoid tissue present and still be able to breathe perfectly through the nose. Such a child may not exhibit the typical facial expression, there may be no alteration in the formation of the upper jaw and placement of the teeth so characteristic of typical adenoids cases and yet the general condition of our patient may be materially influenced by the presence of the adenoid tissue. We have repeatedly seen children present all stages of dull hearing, the local condition showing a typical tubal or tubotympanic catarrh, which has been very materially benefitted by the removal of a very small amount of adenoid tissue. Patients who, on the other hand, have had none of the other typical symptoms of adenoids.

Our indications for the tonsil operation in children are:

- 1st The tonsils must be so large that they are an obstruction to deglutition or hindrance to speech.
- 2nd The tonsils must show disease of structure which it is impossible to remedy by local treatment.
- 3rd It must be definitely determined that the general condition of the patient is unfavorably influenced by the disease of the tonsils.
- 4th There must be a history of peritonsillitis.
- 5th Cervical adenitis with associated tonsillar disease.

It can be readily seen from the study of these indications that the decision concerning the advisability of the removal of the tonsils can be reached only after a thorough study of the individual case and that the co-operation of the internist and specialist is necessary.

The object of the tonsil operation is *the thorough removal of all diseased tissue, leaving intact normal tissue and this accomplished with the least discomfort and risk to the patient.*

As regards the tonsil operation to perform, we believe only in tonsillectomy. As regards the type of tonsillectomy to perform, while we personally prefer the finger enucleation of the anterior arch, the balance of the tonsil being severed with the snare, any type of operation which will attain the object of the tonsil operation will give the desired result.

As with the tonsil operation, so also, with the adenoid operation, we advocate, as far as possible, the complete and thorough eradication of the adenoid tissue and especially are

we careful to thoroughly remove the tissue from the fossa of Rosenmüller.

When one considers the object of the tonsil and adenoid operation it should be evident that these operations are not to be performed by any but skilled operators. We realize that many look upon the adenoid operation as a simple procedure but we have repeatedly seen the dire effects of poor surgery following such operations. We have treated a number of cases in which material damage has been done to the eustachian orifices and cases in which the posterior wall of the pharynx has been stripped of mucous membrane with marked resultant scar tissue. In many of these cases the adenoid tissue had hardly been touched. We have also treated cases of otitis media and have operated two cases of mastoiditis which could be directly traced to sloughing masses of adenoid tissue which had been left within the naso pharynx, through lack of understanding of the so called operator. We have also seen marked tearing of the palate and palatal arches following so called tonsil operations, and have been called in, in a great hurry, by a general practitioner who had attempted a tonsil operation when we found the patient lying upon the floor almost pulseless from hemorrhage. When you stop to think of the serious complications which may arise following the tonsil operation, you will realize that it should not be attempted by any one who is not capable of taking care of these complications.

The after treatment of these operative cases is as important as the post operative treatment of any other case, especially is this so following tonsillectomies. Where we can control our cases, we start, the day following the operation, by cleansing the tonsillar fossae by means of gargle of hydrogen peroxide, this followed by careful mopping of the surface of the fossae, after which the yellow oxide of mercury ointment is applied over the surfaces. We continue this treatment until the surfaces of the fossae are healed. We encourage the use of the voice starting the day following the operation and in singers we advocate their practicing their vocal exercises as usual. This method of after treatment leaves the patient ultimately with clean arches and little scar tissue. Where the after treatment is not given there is apt to form a considerable amount of scar tissue, which results in drawing together of the arches and many of these cases will later exhibit marked symptoms of pain. For this reason after tonsillectomies we prefer to see our cases frequently.

Following the adenoid operation we use little after treatment and do not believe in the indiscriminate use of sprays and douches, as the naso pharynx is ideally situated for drainage.

The complications occurring after tonsillectomies are:

- 1st Mild or severe oedema of the tonsillar arches, soft palate or uvula.
- 2nd Paresis of the soft palate.
- 3rd Hemorrhage.
- 4th Sepsis of mild or severe degree.
- 5th Ear complications.
- 6th Pneumonia.

Oedema of the arches and uvula is usually very readily overcome by using a gargle of glycerine containing three to five percent carbolic acid.

Paresis of the soft palate occurs in a small percentage of cases. It is usually of short duration but there have been one or two cases reported lasting as long as a year. In no case has there been a permanent paresis.

Hemorrhage may be divided into primary and secondary. Primary hemorrhage, which occurs at the time of the operation and secondary which occurs in a few hours or days subsequent to the operation. It is our experience, since using the finger enucleation, that primary hemorrhage is rare and that many of the so called hemorrhages have been caused by undue manipulation of the fossae after removal of the tonsil. If a sufficient time is allowed to elapse for the physiological process to take place hemorrhage will stop of itself. Where primary hemorrhage does occur a bleeding point can usually be found and the hemorrhage stopped by an artery forceps. It may however become necessary to ligate the bleeding vessel. We are sure that the hemorrhage from the first tonsil has ceased before operation upon the second one and where adenoids are removed we remove these after the tonsils enucleation. Occasionally secondary hemorrhage occurs and it often taxes the skill of the operator to the extreme in bringing about a cessation of this.

Sepsis is rare in children but when it occurs it should be given the usual treatment.

* Ear complications occur in a small percentage of cases es-

pecially in adenoid operations and take the form of acute otitis media. This of course should be given the usual treatment. It is not uncommon to have pain in the ears following tonsillectomy but this is a referred pain.

Pneumonia while infrequent is a much dreaded complication following tonsillectomy or adenoid operation and is due usually to inspiration of the blood.

Post operative temperature occurs from eight to ten hours after operation and ranges from 99 to 100 or 101 degrees F. with pulse correspondingly increased. This temperature usually subsides after twenty-four hours.

ACUTE SECRETORY CATARRH OF THE MIDDLE EAR.

BY

GEORGE W. MACKENZIE, M.D., PHILADELPHIA.

DURING the last decade otologists generally have been so occupied with the scientific problems pertaining to their specialty that they have found but little time to spare the general practitioner in an attempt to educate him up to the point of recognizing some of the simpler problems that he is confronted with daily. This fact was brought to my attention more forcefully than it otherwise would have been by a criticism aimed at me inferentially by one of the members of this society a few years ago.

The criticism was in effect that I wrote papers that no one understood. I accept the criticism as a hint that scientific research and scientific papers are best suited for special societies while for general societies like this a paper should be as practical as possible and comprehensible to the average general practitioner. My efforts therefore will be more toward the entertainment of the general man than the specialist. Just how far the specialist should go in educating the general man is a mooted question. Some argue that if the specialist teaches the general practitioner a certain amount the general practitioner is likely to assume that he knows considerably more and will attempt impossible things and become a menace in his community. This argument has some foundation in fact when we consider how many general practitioners are attempting the

removal of tonsils and adenoids in the homes of their patients and with poor equipment for emergencies. There are others who believe that the general practitioner should be educated up to the point where he may recognize conditions sufficiently well to know when to call the specialist in consultation. At the risk of offending either side and with the sole purpose of sharing a few experiences with the general man this paper is presented.

I have chosen the subject of acute secretory catarrh of the middle ear, realizing that it is one of the most frequent conditions of the ear that the general practitioner is called upon to treat, that if promptly recognized and treated the results are most gratifying, whereas if it is neglected it spells either chronic middle ear catarrh with deafness or suppuration of the middle ear at a later period. For these reasons it is important to the patient's welfare that the general practitioner should be fairly well posted in the recognition of this condition.

No one can develop chronic middle ear catarrh without first having had an acute middle ear catarrh. Furthermore, the predisposing causes of an acute middle ear catarrh are identical with those of middle ear suppuration. The determining factor is merely incidental, namely, the character and virulency of the invading microorganisms. It is well therefore for the general practitioner to view the first attack of acute middle ear catarrh as a warning that graver conditions may, or I might say are likely to follow.

Acute secretory catarrh of the middle ear is found more frequently in children than in adults for the reasons, first, that adenoid vegetations and tonsillar enlargement (the predisposing causes) are more frequently found in children than in adults, and, secondly, the cases of untreated acute secretory catarrh have passed over into a chronic catarrh or suppuration of the middle ear in adult life. This latter is the more frequent factor of the two.

Acute middle ear catarrh is as its name implies a catarrhal inflammation of the mucous membrane of the middle ear, associated with a feeling of stoppage in the affected ear and some impairment of hearing.

The predisposing factors in the causation of acute secretory catarrh is the presence of adenoids or enlarged tonsils, especially the former. The activating cause is some bacterial infection, usually a moderate cold in the head which spreads to the

naso-pharynx. A more severe infection, for instance one from the influenza bacillus, staphylococcus, streptococcus or pneumococcus would have produced a suppurative inflammation.

The infection spreads from the naso-pharynx via the adenoids to the eustachian tube from thence to the middle ear. The classification of eustachian tube and middle ear inflammations is done more for convenience than for accuracy. It is true we do find more or less strictly defined types, for instance, mild tubal catarrh lasting a few days only and clearing up spontaneously; the more severe and longer lasting catarrhs of tube and middle ear lasting for several weeks, the acute middle ear suppurations, etc. But on the other hand we find border-land conditions that cannot be classified under any particular type. In other words, we find all grades of inflammation from the mildest to the most severe that cause marked destruction of bone with intracranial complications within a few days.

The question arises why is there this vast difference in the severity of these inflammations? It cannot be because of the local predisposing factors for they are the same in all cases. The answer must be sought elsewhere.

(a) In the *character* of the infecting microorganisms, for instance, the streptococcus produces a more intense inflammation than the bacillus catarrhalis.

(b) In the *particular strain* of the microorganism, for instance it is found that one strain of streptococcus is more virulent than another; furthermore, it has been noted that the strain of a microorganism will weaken near the end of an epidemic as compared to what it was during the height.

(c) In the patient's *resistance* to a particular organism. This fact must be recognized by anyone familiar with the subject of immunity.

(d) In the patient's *vitality* to resist diseases generally. For instance, tuberculosis thrives most on that individual whose vitality has been sapped by some previous illness. This fact is especially noticeable after typhoid fever, diabetes, etc. The same principle applies more or less to all other diseases.

Thus we find that many factors enter into the case to determine the severity of the middle ear affection, *i. e.*, the intensity of the inflammatory reaction and associated symptoms and the probable duration of the attack; furthermore, these factors must be reckoned with in the treatment.

In the average case of acute secretory catarrh the patient pre-

sents the history of a recent cold in the head. The patient complains of slight earache, which in a few cases may be absent, impairment of hearing, possibly slight tinnitus and vertigo; occasionally there may be a slight fever. In a very young child the symptoms may be so slight as not to disturb him, but the observing mother will usually notice a slight diminution of hearing in unilateral cases and quite pronounced in the bilateral.

In acute secretory catarrh definite findings will be observed upon otoscopic examination. However, otoscopic examination should not be attempted immediately for it is a safe rule, as the otologist will tell you, to first ascertain the hearing function before putting any instrument into a patient's ear. If this precaution is not observed some one may claim that your manipulations have injured the patient's hearing and you have little or no protection. For this reason, if for no other, the general practitioner should be familiar with one or more of the tests for hearing. I would advise, furthermore, that you always examine both ears in every case even though the patient complains of but one. The functional hearing tests will show a reduction of hearing to both the conversational and whispered voice on the side corresponding to the ear affected. The tuning fork will show a diminution for low tones particularly. The bone conduction will be lengthened and the air conduction shortened, and in the average case the length of the bone conduction will exceed that of air conduction, the opposite of the normal findings. With these tests completed we are now ready to make the otoscopic examination.

Upon otoscopic examination one of several pictures will be presented and one is just as characteristic as the other.

(1) A partial filling of the tympanic cavity with a sero-mucus discharge, which is more of a transudate than an exudate. It is composed of (a) serum which is sucked out of the tissue by reason of the negative pressure within the tympanic cavity and (b) mucus which is generated in excessive amount because of the stimulating influence of the congestion and is sucked out of the compound mucous glands of the upper end of the eustachian tube by the same negative pressure in the tympanic cavity referred to above.

This sero-mucous discharge is of a straw-yellow color and is visible through the intact membrane. The surface of the fluid is indicated by a horizontal fine black line, known as the niveau,

or level line. To the tyro this line may be mistaken for a hair in the canal and it may be distinguished from the hair by parallaxing. If it is a hair in the canal it will be found to move in relationship to some fixed anatomical point on the membrane. If it is the niveau line it will not appear to move. This fine black line will tend to bend upward at its extremities due to capillarity at the point of contact between the fluid and the lateral wall. The more viscid the fluid the more pronounced this curve will appear.

(2) In another case we may find the picture somewhat modified in that we find one or more circles in the yellow stained portion. This is due to air bubbles which have gotten there through the patient blowing his nose or by the Vansalvan method of inflation that many patients with impaired hearing learn to do. The presence of the air bubble is a rather favorable sign since it must indicate that the eustachian tube which had been closed during the height of the attack has again become patulous. If the ear is inflated after the Politzer method a change may be noted in that there is an increase in the number of air bubbles or that two or more have united into a larger air bubble and with this change the level of the secretion has been lowered since the additional inflated air must displace a proportionate amount of secretion. This change in the otoscopic picture can be best observed by one looking at the membrane while an assistant performs the inflation. Such a case would naturally be a favorable one to treat by Politzer inflation alone.

(3) The third picture is even more interesting than the preceding and is one that the inexperienced man is less likely to recognize as pathologic. It represents a case in which the tympanic cavity is entirely filled with secretion. Consequently there is no niveau line to guide us and rarely are there any air bubbles. Furthermore the straw color is less likely to be recognized because we are compelled to compare its color with that of the other normal ear which is a more difficult task than we have when the cavity is half full and both the yellow straw color below and the normal color above the niveau line can be observed and compared at the one glance. However we have other findings to guide us which are not present in the other case. Compared to the normal we find in the case of acute secretory catarrh with a completely filled cavity the following:

NORMAL MEMBRANE

(1) * Membrane is of a peculiar light gray color.

(2) The membrane is translucent though the long process of the anvil can be recognized in the depth of the tympanic cavity.

(3) The hammer handle appears to be of normal width.

(4) The normal cone of light is present running forward and slightly downward as a narrow isosceles triangle, apex at the tip of the hammer handle (umbo) and base the anterior inferior margin of the membrane.

MEMBRANE IN CASE OF
SECRETORY CATARRH

(1) Straw-colored or very pale yellow. The beginner pronounces it less yellow than the expert because he is less keen in recognizing variations in colors on the membrane.

(2) The membrane appears to be opaque. In fact it is the fluid which is opaque and prevents us from seeing the long process of the anvil.

(3) The hammer handle appears to be narrow due to the opaque fluid which is present between the posterior line of the hammer handle and the membrane. This finding can be compared to the preceding.

(4) According to Politzer the cone of light is in the same position but more brilliant than normal. According to personal experience in some cases I find it less brilliant than normal. Occasionally it has a slightly frosted appearance due to water logging of the membrane.

The prognosis in untreated cases is rather unfavorable to the ear and indirectly may be to the patient's life. One of four things is liable to follow:

(1) The eustachian tube may not become patulous early enough to drain the secretion from the ear completely, in which

*The exact coloring and translucency is difficult to describe. One must actually see quite a number of normal membranes before he can form a definite idea of the picture and retain it in his mind.

event the secretion dries up in the ear leaving semi-organized fibrous bands that may limit the mobility of the ossicles and impair the hearing.

(2) One attack predisposes to another and the greater the number of attacks the greater the likelihood of permanently impaired hearing.

(3) Acute secretory catarrh when not treated may become subacute or lead to chronic middle ear catarrh and impaired hearing and tinnitus but never to so-called otosclerosis.

(4) As pointed out elsewhere acute secretory catarrh may be the forerunner of acute middle ear suppuration and in the event of a suppuration the adhesive bands which were left after the acute secretory catarrh act unfavorably to drainage; therefore the suppuration is more likely to develop a mastoid or other complications or chronic middle ear suppuration than in a case where these adhesions were not present.

The results of treatment are very satisfactory. During the attack treatment should be directed toward the ear itself, after the attack toward the predisposing causes—the adenoids and tonsillar conditions.

In the case where the tympanic cavity is partially filled with sero-mucus an attempt should be made with Politzer inflation to empty the cavity. The success of the treatment is determined by our ability to lower the niveau line and displace the fluid by air bubbles. Should we succeed with our first efforts the indication is to push this form of treatment. The question has arisen in some minds, can the fluid in the middle ear be driven into the mastoid cavity? The answer is, no, for the mastoid cavity is a dead space containing air and this acts like a cushion to prevent driving the fluid into it.

In the second picture referred to above where the presence of air bubbles were visible in the fluid we already have an indication of returning patulousness of the tube, and for further efforts at Politzeration of the tympanic cavity.

In the third picture (with cavity quite filled with fluid) Politzeration should be attempted and the results observed as in the other cases. So long as we are able to succeed in driving air into the middle ear as indicated by increasing the number and size of the air bubbles and lowering of the level of the fluid we have clear indication to continue the treatment. On the other hand if we fail to succeed by this method we may try the next procedure, that of shrinking the orifice of the eusta-

chian tube with cocain or some similar acting agent and then inflate with the catheter. In many cases we shall succeed by this method after having failed by the first. If both these methods fail to yield results we may then incise the membrane and attempt Politzerization of the tube combined with suction applied to the external canal. There are some cases that come to us so late that the secretion is so thick and viscid that it cannot be evacuated by any other method.

Any form of treatment that succeeds should be applied. The results are uniformly gratifying. After the acute attack has subsided remove the enlarged and diseased adenoids and tonsils as a preventive measure against future attacks. The history of recurrent earaches and attacks of slight deafness may be the only indications that the patient presents suggesting the presence of adenoids. This history alone is sufficient to warrant their early removal remembering that we have the welfare of a very important organ at stake.

In closing I wish to impress on the minds of the general man the importance of making hearing tests in all cases presenting themselves with ear symptoms. Secondly, that acute middle ear conditions are secondary to diseased conditions existing in the nose and throat. Thirdly, when a patient comes complaining of impaired hearing or earache look into both ears with a speculum.

That I may not be judged of being too severe on the general man I wish to acknowledge that we specialists frequently have patients referred to us for treatment with a provisional diagnosis which is subsequently found upon careful examination to be correct.

HYGIENE OF THE EYES OF SCHOOL CHILDREN.

BY

WM. M. HILLEGAS, M D., PHILADELPHIA.

THE consideration of this subject includes that of the prevention of abnormal conditions and the care of such conditions if present. Abnormal conditions are diseased eyes and errors of refraction. Examination at regular intervals will reveal their presence or their threatened development.

All large cities and most cities of moderate size in this part

of the country have instituted medical examinations of school children for general diseases, and especially for contagious conditions, and many of these embody admirable ocular examinations as part of the routine. In smaller villages it is up to the teachers to exercise some degree of caution, and here we can each be of assistance. Such examinations should consist of an observation of the eyelids and the ball of the eye for diseased conditions, and of the visual apparatus for squint, and a measurement of the acuity of vision.

I will describe later just what is being done in the Philadelphia schools in this line.

If there are any defects the child should be recommended for treatment, and insistance should be made that this be carried out if possible. In New York city the child is not permitted to return to school after being reported, until the eyes have been attended to, thus overcoming the carelessness of parents and of some general practitioners who so frequently tell the parents not to be bothered by the report of the school medical inspector. And if the child does not return the truant officer is sent to discover the reason for absence; in some cities this latter work is done by nurses.

If any of the following diseases are discovered, the child so affected must be excluded from school: trachoma, infectious conjunctivitis (so-called pink-eye), corneal ulcers and vernal or spring catarrh, the first two on account of their contagiousness, the latter two because of their possible injury to the eyes if used. In foreign sections of large cities, especially on the seaport, a careful lookout for trachoma should be kept.

Vernal, or spring catarrh of the eyes, a form of chronic conjunctivitis which causes vascularization of the cornea, is most destructive to the vision by its scarring, and being constitutional in its cause, the child must be treated, and should be excluded from school as rigorously as a case of corneal ulcer. Scrofulous eye inflammations such as eczematous lid granulations and phlyctenular conjunctivitis and keratitis must be reported, and insistance should be made that the child gets treatment.

Granulated lids, recurrent styes, and ordinary conjunctivitis are usually indicative of refractive errors and should be reported.

May I here suggest that strict orders should be given to all scholars in assembly regarding the danger of borrowing handkerchiefs, and their indiscriminate use.

These examinations should be made when the child first enters school and from year to year in older children.

Any observer, medical or lay, must notice that of recent years a larger proportion of school children than formerly are wearing glasses. School teachers of many years work have told me they are sure it is over 100 per cent in excess of twenty years ago. A double reason for this exists—the greater care in examining school children and also the fact of overstrained eyes. Children start school at an earlier age, and the ocular muscles are required to converge for lengthy periods of study and application before attaining their strength. The difference in time between the beginning of structural development and that of functional development and the lack of consideration usually accorded the eye in contrast with that given to the rest of the body during structural development is remarkable¹. For instance you do not allow a child to walk while its legs are still quite weak for fear of bow legs.

The school curriculum is more crowded and there is a burden on some scholars of the work assigned for home preparation.

The normal use of the eyes is of such vital importance to our welfare all our lives, both as to acuity of vision and of comfort in their use, that any measures for conservation of vision early in life during the school term must receive careful consideration and active support.

It would be wiser if children did not start in school until seven years of age; and personally I would favor the abolition of kindergartens; they are hardly more than day nurseries for the convenience of mothers who are desirous of shirking their parental duties; or—the material alteration in methods used in them—at present their work is so futile, except in a few private kindergartens where the Montessori system or some similar method is in use.

Eye strain and poor vision in school children often affects their standing in their classes. Their reports say that such children are quick and intelligent but inattentive and unable to concentrate attention on their work. They dislike near work; there is discomfort on accommodation resulting in inattention. Magical results are frequently obtained by the correction of their refractive errors and these children again take their place in class with the normal child.

The correction of decreased visual acuity is important from an economic standpoint as a cause of backwardness, and this

is the principal scope of the work done by the eye dispensary of the Bureau of Health in Philadelphia. Dr. Wessels, in charge of this Department says² "Such corrections not only increase the efficiency of pupils and teachers, but have an important economic value as well, because if the child is backward and remains in the same grade two or three years it is an additional expense to the State to teach that child." However, but few cases are sent to this department to be refracted for the relief of asthenopic symptoms which are just as important as a cause of lack of efficiency, especially in older children. Many of these asthenopic symptoms develop only by close use of the eyes in their formative stage, for the eyes of children by no means reach their full development, especially the ocular muscles, by the time they enter school, and have a strain put on them.

In older children, after some years of school work, refractive errors are often the cause of functional neuroses, and these are very much improved by wearing proper lenses for their correction. Grimaces, frequent blinking, shutting of one eye, stammering nervousness and irritability; even epilepsy should be investigated by an ocular examination. I will not burden you with the recital of cases, but will state that I have personally seen corrected each of the above mentioned neuroses by lenses. In most of these cases the error was muscle imbalance.

All backward children should have their eyes examined for a possible cause for what seems like stupidity. Dr. M. B. Beals, of New York, reports a remarkable series of selected cases in mentally defective children with marked improvement in manners, disposition and schooling by the correction of refractive errors, which were usually of high degree, resulting in increased efficiency and the advancement of the pupil.

The arrangement of light in relation to the placing of desks in the school room is important; the windows should be only at the side, preferably the left side, and at the rear of the room. There should be one square yard of window glass surface to five or six of floor space, or even a larger proportion, such as 1 to 3. It is a real pleasure to inspect a modern school and note how much light there is in all the rooms, and how admirably the desks are arranged so that the light will fall on them over the left shoulder of the scholar, thus allowing free use of the right arm and hand without obstruction. Remember our early days in school?

Slate and slate pencil have been almost entirely discarded, in city schools, and rightly so as they are hard on the eyes, pencil and paper being used instead, and ink is used for examinations only. The paper used is never of the glazed kind, rather a dull surface. It is important that the size of the print in school books be correct, not too small, No. 10 Jaeger being used by preference in all the later school books, and so printed as to have 10 or 12 letters to the inch. Blackboards should be placed directly opposite ample window space.

Nearsighted children should be allowed the special privilege of sitting close to the blackboard and near the light regardless of their standing in class. Progressive myopia is very destructive to vision and requires careful attention and perhaps absolute rest of the eyes, even at the expense of education. It is therefore necessary to determine whether a case of myopia is progressive or stationary.

There should be complete rest of the eyes during each session, the curriculum can be so arranged as to allow for this. The outdoor recess is of especial value for the younger scholars. Summer vacations should mean rest of the eyes, children should not be encouraged to read too much during this time, or to study at all. Home study at all times should be slight. Insist on general hygiene of the child being observed, especially if the case is referred by a general practitioner.

It may seem that I advocate holding back a child in its education by observation of all these precautions—by no means—the increased efficiency gained by proper use of the eyes and brains is shown eventually by improvement in clearness of thought and power of application. We are “pushing” the children of recent years. Do not forget that the real business of a child is not to pass examinations, but to grow up. As Dr. Cameron of Chicago³ says “the fear that the love of play will interfere with the love of work and so undermine character and development is groundless, play develops vitality and nervous energy and links special attention and enthusiasm.”

The following is a brief outline of the work being done in Philadelphia by the doctors assigned to inspection of school children. Especial attention is given to the first examination of each child; later examinations are, to a certain extent dependent on their card records. As soon as the child knows its letters, about the age of eight, every child is examined, and this is then repeated annually. The teacher calls attention

first to any child seeming to suffer from eye symptoms. The child is questioned as to the ordinary symptoms of asthenopia, eyache and headache. The eyes are examined for inflammatory symptoms, on the lids and surface of the eyeballs, and the vision is examined by the use of Snellens test card. If the vision is decreased or if there are any inflammatory or asthenopic symptoms, the child is given a card signed by the school doctor "Eye trouble," recommending treatment. Please notice that the child is *not sent* to another doctor or hospital or dispensary, it is *recommended* for treatment. All cases of squint are reported regardless of age, even before letters are known, and note that this is in accord with treatment, as the earlier the child gets treatments for strabismus the better the chances of success, as many of these squint cases are due entirely to a high degree of hyperopia and are cured by wearing lenses early enough.

If the parents report to the school their financial inability to obtain the needed lenses, the scholar is referred to the City Hall where the Bureau of Health has a department of Ophthalmology, with a corps of oculists to examine these children and they have a fund with which to furnish them with glasses, free of any charge.

Philadelphia medical school inspectors state that in that city 25 per cent of all school children have defective vision or eye strain, but I hardly think the figures bear them out, rather too high. In 1913, there were 211,000 total inspections in Philadelphia schools, including public and parochial, and there were 24,000 children reported for eye conditions; of this number 2,800 were examined at the central clinic and 2,200 were furnished free glasses. In 1914 there were 22,500 reported for eye conditions; 4,000 were examined at the central clinic, and 3,000 were furnished free glasses. According to the last report (1914), only 30 per cent returned to school treated, and more than half of these were treated at the central clinic. The lack of a larger percentage treated is due largely to the factors of expense and indifference, the only alternative to consulting an oculist being free dispensaries, and partly to the causeless fear of the "deadly drops," as they are called by some examining opticians.

In these reports the children are divided into three social grades: A, representing the well-to-do; B, those in moderate circumstances; C, the poor. The dispensaries were very freely

used by Class C, 80 per cent, Class B, 55 per cent, and even 30 per cent of Class A went to free dispensaries. The responsibility for such dispensary abuse is divided between the parents, the hospital management, and the physicians attached to such hospitals who do not protest against the imposition.

In some sections of Philadelphia lectures have been given at the schools to the parents on various subjects of interest to them and to their children, the scholars, and these have included several talks on the eye, and its care.

Let not the use of the phrases—increased efficiency, economics, etc., suggest that these are the principal objects in the study and application of the hygiene of the eyes of school children; the comfort and health of these future citizens and workers is the first and strongest consideration.

1 Dr. G. R. Reed, Cincinnati, O. O. & L. Journal, June, 1915.

2 Dr. L. C. Wessels, Philadelphia, Defective Vision of School Children from an Economic Standpoint, August, 1913.

3 Dr. Cameron, Chicago, "Play." Journal of American Institute of Homœopathy, August, 1915.

DISCUSSION.

DR. C. W. STILES, Washington, D. C.: Coming from an entirely different part of the country from the essayist, it is positively refreshing to hear a man refer to the point that most of our cities are today having medical inspection of schools. Very unfortunately, in my part of the country (namely, the South), there are very few of our cities which have medical inspection of schools. In the first place, we cannot afford it. We are faced by a number of serious problems down South—such problems as trying to meet conditions produced by cotton's being down to seven and a half cents. While we are still urging medical inspection of the school children, we are obliged to begin our work in that line in a somewhat roundabout way. We are teaching the teachers to make the first inspection. We are urging that every teacher in the public schools make a test with the Snellen board at the beginning of the session; and, as a matter of practical experience, we find that this method is bringing a great many children to the oculist. For two years past, I have made a special study of about four thousand Southern school children. With a number of assistants, I put anywhere from one hour to five hours on each child, including the mental, as well as the physical tests. It was absolutely surprising to find the number of defective eyes that we came across. It was also astonishing

to notice how many of the children constantly complained of headaches to their teachers, the causes of these headaches not being discovered. With a corps of ten school teachers, I had all the eyes tested; and many of these children then got into the hands of the oculist.

One practical point developed in our work: that is, the inadvisability, in our part of the country,—I am not speaking of yours,—of making a diagnosis in the school. I make it a principle that only in the severest of the cases will I explain to the parents the condition of the child's eyes. I simply say that something is wrong with the eyes of this child, and urge the parents to take it to an oculist. It is only in the very exceptional cases that I am willing to tell the parents what the trouble is. I have found that to be the best practical plan to follow.

Another point that has developed in the Southern work quite prominently is the increased value of the trained nurse in the school over that of the truant officer. A good, diplomatic trained nurse can accomplish much more with parents than can a whole basketful of truant officers.

DR. METZGER: I should like to set Dr. Stiles right regarding the making of a diagnosis. I think that the tendency of our school inspection in this State is to give a false sense of security in many cases. The child may be able to read and write, and yet have markedly imperfect vision and suffer later. If the statement is made that the child has perfect vision, this sets at rest suspicions that ought not to be put to rest. Vision is a relative thing. I think you see the way I see. You probably see very much more keenly than I, or I may see more keenly than you. The organic structure of the eye, especially the retinal part, is largely accomplished in development up to ten years of age. If we had a way of finding out early any defect, there would be a possibility of securing retinal development. If this is once secured, we have a key to an important thing; that is, binocular vision, vision obtained in both eyes, and equally. Then we shall see as we ought to see. If we do not find this out until much too late, we lose a great deal of the beauty of nature, we lose largely the idea of perspective, we fail to get positive knowledge easily. Education best attained comes easily. Nothing is hard that we do easily. I think that I can remember the time when a ten-pound weight was awfully heavy. It is not so heavy now. I remember the time when the multiplication table was hard, but it is easy now—not because the weight is changed or the multiplication table has changed, but because the amount of development has

changed. If the mechanics of study, the mechanics of acquiring knowledge, in whatever way it may be, is a matter of labor, there is very little development. Development comes slowly, drags heavily, and this will be shown in matters educational. There should be various kinds of occupations for the children, mechanical work, and so on; so that the eye is not constantly taxed by being held down to the printed page, but the strain is varied by exercises of various kinds.

School inspection is a good thing in Pennsylvania, and it can do a great deal more; but the time is coming when the medical inspector shall not be the man just out of college, with little experience and no training in that kind of work, but the very best man in the community. He must have a special knowledge of the things he investigates, and his work must be thorough and accurate; because the time is coming when such things will be demanded.

DR. HILLEGAS: May I say to Dr. Stiles that I do not want him to go away from here with the false impression that it is customary in Pennsylvania for the school inspectors to make the diagnosis. They are not supposed to give a diagnosis. In the case of the eyes, they generally say, simply, "Eye trouble." The orders are that the children are to be recommended to consult their physician for skin disease, eye trouble, etc., according to a partial diagnosis.

THE SPIRIT OF PLAY AN OVERLOOKED HYGIENE FACTOR.

BY

ALBERT ROWLAND GARNER, M.D., NORRISTOWN, PA

IN THE days of our Puritan forefathers play was considered not only an idle waste of time but altogether wicked. It is a far cry from that gloomy view of one of God's best gifts to the modern one. Even today the ideas of the majority of people in regard to play must be both enlarged and modified before they can get its true meaning and derive from it the complete benefit which it is capable of giving. Play is an evidence of normal and not abnormal mentality. It is not a simple but a complicated process.

According to Groos play may be considered from "Physiological, biological, psychological, aesthetic, social, and peda-

gological aspects." Play is a process of mental and physical development and is an hereditary instinctive response to certain stimuli.

The spirit of play is atavistic. The kitten can no more refrain from leaping for the ball than the cat from chasing the mouse. The instinct of play in animals arises from their instinct for self preservation. So it has been with our forefathers and with us. Our forefathers fished for food, we fish for fun. They stalked the deer to keep from starving, we hunt game for sport.

The boy or girl, man or woman who plays has not only better co-ordination, more self control, more poise, but has a finer moral fibre than he or she who does not. This moral fibre which may be established or greatly strengthened through play may prevent such disease as tuberculosis, gonorrhœa, syphilis and alcoholism. The Superintendent of the State Insane Hospital at Elgin, Ill., goes so far as to claim that golf is a cure for insanity, and on the strength of his belief has recently laid out a 9 hole golf course. In my opinion the normal man plays and it would be impossible for him to become an alcoholic, nor is he so likely to contract communicable diseases.

The touch sense of the young babe develops into the various muscular sensations of play, going on through the various stages of the rattle, toys, games, imitation, imagination, and contests on up to the aesthetic diversion.

(2) Seashore writes "Play is free self expression."

(3) Ruskin puts it this way "Play is an exertion of the body or mind, made to please ourselves, and with no determined effort."

(4) Schiller expresses truly and well in the following "A man is fully human only when he plays." This brings me to my point. We might substitute natural for fully human, then it would read that a man is natural only when he plays. That he is free from repression, self consciousness, and other mental states which ordinarily cramp his easy or natural activity. All work should therefore be done in a playful attitude. Work will be done better and more easily with less expenditure of energy, and with less wear and tear on nerves and muscles if the spirit of play is present.

(5) Forbush in his *Manual of Play* quotes Dr. Carus. "The difference between a genius and a pedant consists ex-

actly in this that the genius performs his work playfully, while the pedant groans under the drudgery of his task." Any one who does not know the feeling of freedom, the joy, the exhilaration that come from play cannot work with genuine zeal and enthusiasm. Seashore also tells us that "Play is an expression of the joy of life."

How much better off are the children brought up in the play grounds epoch than those under such a system as that of the Pietist Tollner who uttered "Play of whatever sort should be forbidden in all evangelical schools, and its vanity and folly should be explained to the children with warnings of how it turns the mind away from God and eternal life, and works destruction to their immortal souls." However in a way the value of play in education has been understood since the time of the matchless Plato, but recognition of the spirit of play as an aid to health is more recent.

Shall we run over hastily some physiological effects from the play spirit. The condition of relaxation during play permits free circulation through all tissues, supplying nourishment and collecting waste and toxic substances. The centre of the vaso dilators has been traced far into the central nervous system, but a definite origin is not clear. It is thought however that the centre is in the medulla where the vaso constrictor centre is. This centre has been clearly located at about the same level at which the facial nerve passes out. The vaso motor nerves pass down the cord in the anterior horns and out through the anterior spinal nerves into the sympathetic system to the blood vessels and glands. It has been fairly well proven with the plethysmograph that such mental states as pain, distress, fear, doubt, anxiety, worry, and depression, stimulate the vaso constrictors, with the consequence of interfering with normal action of circulation and glands giving as a result a lessened nutrition to cells and increased accumulation of toxic substances in the system. The persistence of this condition must undoubtedly favor arterio-sclerotic changes either by the constant tendency towards tonicity of the blood vessels and glands or by the absorption of the toxines which should be eliminated. The plethysmograph has also proven fairly well that mental states of joy and satisfaction stimulate vaso-dilators thereby increasing circulation and absorption, and the elimination of toxines.

Play is directly associated with pleasure. There are those

who cannot get pleasure out of their work. Their work is monotonous to them. To counteract this monotony or modified pain, a proportionate amount of play should be introduced into their lives.

Work in itself in a reasonable amount is not harmful. It is the wrong attitude toward work, the fretting and worrying about it that does the harm and dissipates energy.

It often happens that certain nervous systems and certain kinds of work are incompatible. Consulting psychologists are giving this matter special attention. After studying their patients they can say whether John Brown has a makeup for medicine, law, science, business, or the ministry, even going so far as to tell him for what branch of his special calling he is best fitted. This practice in a measure will prevent a great many occupational misfits.

Over work never caused insanity, but it is frequently the exciting cause in a neuropath who otherwise might escape the psychic crisis.

Unfortunately exercise and play are sometimes interpreted as the same activity. Exercise as such is physical—and only helps the nervous system indirectly, while play helps directly mind as well as body. Physicians have prescribed exercise for patients when it was not exercise but play for which they were dying. Even some misguided physicians themselves will spend the day climbing stairs, putting off and on overcoats, and cranking machines and then, because they don't feel well, will exercise with dumb bells or chest weights, or take a 3 or 4 mile walk. Exercise—it isn't exercise they need it is the spirit of play, spirit of new life—light-heartedness, freedom, abandonment, relaxation, and pleasure of some sort. Think over it a bit why is it that music is always necessary during gymnasium drills? I don't remember ever having stopped a foot ball game to put a nickel in the slot for more music. The young father of fifty who plays with his children is certainly better off than the old fatherless man of fifty who punches a bag for "dyspepsia." The spirit of play produces health, and strength. The feeling of strength according to Hall (10) "Gives a sense of superiority, dignity, endurance, courage, confidence, enterprise, power, personal validity, virility, and virtue in the etymological sense of that noble word." Remember with (8) Seashore that the "Spirit of play makes the game of life, the skill in exercising it makes the artist."

(11) Quoting from Hall "All are young at play and only in play, and the best possible characterization of old age is the absence of both soul and body. Only senile and over specialized tissues of brain, heart and muscles know it not."

The spirit of play depends upon the individual. The spirit of play is subjective not objective. Sad indeed, it is that millionaires on their yachting trips and travels wander through the world in vain longing to gratify their instinct for play. Did they but know it this gratification can come only from within. It is indeed the spirit of play after all. There are too many people who consider it disgraceful to enjoy a hearty laugh, or a boxing bout. Such people are easily relegated to the chronic grouch class.

As the pendulum of life swings through the arc of the mechanical, monotonous, and conventional activities there must be adjustment. The greatest adjustment for the intensity of our American strenuousness is exercising the instinct with which all animal life from the lowest vertebrate to the highest of God's creation has been endowed—The Spirit of Play.

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DISCUSSION.

DR. C. S. KINNEY, Easton: Having dealt with many diseases for upwards of twenty-five years, I have found that many of the cases that have come under my observation have come as the direct result of not having enough play in their lives. Take the depressing emotions of anxiety, fear, etc. The person who indulges in any one of them is never able to see things in the proper perspective, or to feel confidence in him-

self, that he will make good; but if he has a fad, and indulges in worry less, he moves with a freer motion, and is able to let the sunshine get into his soul. Without play, we should have a miserable world.

A woman who came under my observation told this story: she said, "Last fall, my husband said that we would have a Fourth of July celebration, better than any we had ever had. I waited until the time came. Then he got ready to attend this celebration. On the morning of the Fourth, my husband and the hired man drove up to the door in a buggy; and he said, 'Mary, we are going on a picnic.' Then he and the hired man drove off. After that," she said, "I do not know what happened." She came to us in a condition that we now recognize as acute melancholia. We tried to get her interested in something, and to enjoy life as much as it was in her capacity to do. She made a first-class recovery. All the nurses took her to games and entertainments; and for once in that woman's life, she lived. It was play that helped her. It will help every one of us. Any man who thinks he can live without enjoyment and relaxation is mistaken.

DR. J. M. HEIMBACH, Kane: It has been said, "The boy is father to the man;" and I always want to have a lot of the boy in me. It is true that when a man gets up in years and forgets about the boy in him, he begins to get very old. I am not so old but that I can act the fool with an eighteen or twenty year old boy, and can do it with a will. If you do not believe me, come to our gymnasium, and I will show you.

DR. HENRY I. KLOPP, Allentown: I heartily endorse the contents of the paper, as well as what Dr. Kinney has said. In our institutional work with the mentally unbalanced today, we recognize that play is accomplishing a great deal. Instead of letting our patients sit about idly, we try to get them interested in a combination of work and play. We try to make the work real play, and in that way encourage them to divert their minds from themselves and become occupied. At the same time, they indulge in play; for example, gymnasium games, kindergarten work, etc. In the summer, we have gardens for them; and this work is carried on as play. They are encouraged to take an interest in the gardens, and watch the vegetables and flowers grow. They have picnics, which, in themselves, result in play. I know a millionaire who was asked why he did not have to have a vacation. He replied, "I am having a vacation every day of my life." He is the kind of man you often find. He is constantly occupied, but he considers his

work play. Many of us make our work labor. If we could only develop a state of mind in which we could get pleasure out of work. I believe that there is no one who becomes mentally unbalanced as the result of over-work alone; but when you combine worry with it and get no pleasure out of it, you get mentally unbalanced.

SOME LACHESIS COMPARISONS.

BY

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IF an army of individuals were before you for comparison with one another, you would probably at first thought group them according to some gross resemblance, as all the tall ones, all the small ones, the blacks, the whites, the males, the females, the fat, the thin, etc.

These comparisons should be interesting, but while making them it would probably become noticeable that it might be even more interesting to compare those with similar characteristics or peculiarities, be they large, small, fat, thin, male, female, or etc.

Still again it might appeal to our sympathies to compare those similarly afflicted.

And so on it would be instructively interesting to group together those with minor resemblances—even to contrast any one with all the others, one after another.

This same process can be applied in *Materia Medica*. Our object however here is undoubtedly for success in prescribing. This success will depend almost entirely, not upon the mere matching of similar symptoms, but particularly upon our ability to outline most minutely the scope of action of our individual remedy first, and keeping this individuality distinctly before us while we differentiate their characteristics and peculiarities. This of course at once emphasizes the use of our repertories.

Now let us illustrate by *Lachesis*. Its scope of action, in the rough, is in—

1. The cerebro-spinal nervous system, and especially the pneumo-gastric;
2. The blood.

The nerve centres are poisoned, and as a result, with the rapidity of lightning, prostration, unconsciousness and convulsions ensue; and through the pneumogastric we get great irritation of the throat, larynx, bronchi and heart, yet not passing into distinct inflammation.

The blood decomposes rapidly, the fibrin of the blood is destroyed, the tissues are acted upon by the venom, and we have resulting ecchymoses, hemorrhages, most malignant asthenic inflammation, abscesses, gangrene, pyemia, and as a result of all a low asthenic typhoid condition.

These are the grossest physiologico-pathological action of Lachesis, and the remedies that suggest themselves for comparison particularly are: *crotalus horridus*, *naja tripudians*, *elaps corallinus*, and *bothrops lanceolatus*. Let us first compare these with Lachesis.

Crotalus horridus—the rattlesnake poison: Lach. and Crot. are very similar in physiological action, and the only difference between the two is that Lach. has more of the neurotic action, and its action, if it can be, is more rapid and profound. Crot. has a more marked tendency to hemorrhage, and its general exhaustion is even more profound than for Lach., and Hering says the coldness and collapse are more marked than under Camphor. This differentiation of the general scope of action of these and future remedies must of course be familiar for accurate prescribing, but it is not satisfying. How do their characteristics and peculiarities compare? The two chief characteristic features running all through Lach. and not found in Crot. are: "< left side" (Crot. "< right side"), and an aggravation of all its symptoms after sleep. Although these symptoms may be explained after our physiologists and pathologists know more, yet, regardless of that, these are more important features in selecting and differentiating the remedies than the former scope of physiological action that we should however be continually familiar with. We are still unsatisfied. How do these remedies compare clinically? As we read, study, and treat the sick, we believe these two remedies should be more frequently compared in their relation to malignant diseases. It has been a matter of clinical experience that Crot. has been the most valuable of all remedies in yellow fever, it has been the most homœopathic to it, although Lach. was also found good in yellow fever, but with much less distinction. In diphtheria these two remedies have been

found very useful, but Crot. has less feeling of constriction around the throat than Lach., and a greater tendency to hemorrhages.

Naja tripudians—the Cobra: This like Lach. affects profoundly the cerebro-spinal system, and the blood decomposes and becomes fluid. In this physiological action all of the serpent poisons seem very similar. In the nervous system the pneumogastric and glosso-pharyngeal and spinal accessory are particularly affected, and hence we find they have such symptoms in common as, choking, constrictive sensation, dyspnoea and heart symptoms. They are all found in *Naja* as in Lach., but in *Naja* the nerve phenomena are most pronounced of all animal poisons, while the hemorrhages are much less pronounced than for Crot., even less than for Elaps. This crudely defines the comparison of their physiological action. Now what about its characteristic symptoms and peculiarities? These have not been brought out for *Naja* as in Lach., and Nash explains that it is probably because it has not been proved in the higher potencies like Lach., which you will remember was proved extensively in the thirtieth potency. However, *Naja* has a unique symptom, "a feeling as though organs seem to be drawn together," as in neuralgia of the ovary, where the heart and ovary were being drawn together. It has the same aggravation after sleeping that is found in Lach., and even the preference for the left side like Lach., but it does not have the characteristic left to right direction of its pains found in Lach. Clinically the same class of diseases are suggested for these two remedies—the malignant diseases enumerated under Lach., and particularly diphtheria, where it is very similar, applying more markedly perhaps to the most serious impending heart paralysis symptoms. The heart symptoms of *Naja* are very pronounced and point more markedly to the remote effects of actual cardiac valvular lesions; Lach. more to the incipency of rheumatic diseases of the heart. I believe if *Naja* were proved with higher potency we should find it rivalling Lach. more closely in importance.

Elaps corallinus—coral snake: Without repeating, the physiological action of this remedy is quite similar to that of the other snake poisons. This drug has not been proven extensively, and therefore our knowledge of its effects and uses are meagre. Its characteristic features are however a very dark, even black blood, and it has this marked peculiarity,

"cold things disagree." Lach. has the cold feeling in the stomach also, but it is a more marked distress in the chest and stomach after cold drinks. Clinically we think well of Elaps in otorrhea with dark discharge, violent headaches, epistaxis of very dark blood with nasal catarrh and ozæna, and in cough with hemoptysis, where the right lung is affected.

Bothrops lanceolatus—yellow viper or lance snake, found in the island of Martinique. This is the last of the snake poisons that, like all the others, has the profound effect upon the blood and nervous system. It affects the system very similarly, producing the choking and a congestion of the lungs on the one hand, and gangrene, bone necrosis and hemorrhages on the other. For want of sufficient proving we know little of its finer action, but it has a few peculiar and characteristic symptoms. It produces a peculiar aphasia; there is a nervous trembling and inability to articulate; and a day blindness, "can scarcely see her way after sunrise." (Here remember the night blindness of Bell.) Lach. has similar tongue conditions and trembling, but not so marked: it also has a dimness of vision, but not such a decided day blindness.

We have now examined the remedies that most closely resemble Lach. in its grossest physiologico-pathological manifestations, and these should be well comprehended in order to be able to outline the scope of action of the remedy. In a very general way Lachesis cannot be compared with any other remedies.

Remember therefore the general action of these remedies as of three sorts:—

1. The prussic acid like lightning action. The patient starts with a look of anguish on his face, and drops dead.

2. The part bitten swells and turns, not bright red, but rapidly dark purplish, the blood becomes fluid, and the patient assumes septicæmia symptoms. The patient becomes prostrated, and covered with a cold clammy sweat. The heart beat increases in rapidity, but lessens in tone and strength. Dark spots appear on the body like ecchymoses; the patient becomes depressed from weakness and sinks in to a typhoid state and dies.

3. The nervous phenomena running all through their rubrics: vertigo, blindness, tremor, face besotted, dyspnoea or even stertor. All the discharges become offensive. Dysenteric or typhoid symptoms. Death.

Don't forget the choking and heart symptoms.

Now let us compare further. First the grand characteristics of Lachesis:—

1. The patient is worse from sleep—he sleeps into an aggravation. This is explained perhaps by the influence of Lach., through the pneumo-gastric nerve, on the centres of respiration, and that it is a weakening drug. While awake we have some control over the respiration. During sleep this voluntary control is lost. It is when this change takes place that the weakening effect of Lach. is asserted. This symptom reminds us of Digitalis in heart disease, and Grindelia in respiratory conditions particularly. But Lach. does not have the extremely slow, intermittent pulse, so characteristic of Dig. Lach. is loquacious, Dig. has great anxiety. Lach. has dimness of vision and is sensitive to light, Dig. has dilated pupils and is insensible. Dig. does not have the great sensitiveness to touch about the throat and respiratory organs of Lach. They both have marked fainting from cardiac weakness, and similar urinary conditions, but the serious septicemia, low typhoid, and blood conditions of Lach. are absent in Dig., and the latter does not apply so particularly to the climacteric conditions. Of course there are many more differences. As to Grin., which also stops breathing when falling asleep, and wakes with a start, gasping, even with Cheyne-Stokes respiration, this symptom is entirely due to asthma or chronic bronchitis and not heart conditions. But one must not forget the applicability of Lach. to respiratory conditions, such as nervous cough, whooping cough, croup, asthma, and even pneumonia sometimes. Otherwise Grin. does not resemble Lach.

This symptom “< from sleep,” or “sleeping into an aggravation” is found under many more remedies in our *Materia Medica*, and of course sometimes may have to be differentiated, which is easy in most instances, if we know the scope of action of our remedies.

2. Excessive sensitiveness of the surface with intolerance of touch or constriction. This is no evidence of inflammation, and must not be confounded with the inflammatory soreness of Acon., Arn. or Bell. It differs also from that of Apis, which has a bruised sore feeling, more acute than Arn. It also differs from the sensitiveness of Nux Vom. and Lyc., which have it about the waist only after eating.

Why the almost invariable aggravation from pressure in

Lach., and almost invariable relief from pressure in Bry., are more questions not yet explained by physiologists, but don't forget them just the same, for they are important differentiating grand characteristics of these remedies.

Numerous remedies have this hypersensitive symptom, but by knowing the general scope of action of our remedies, differentiation is easy. Those having it to a very marked degree are:—

Asafatida, for instance, has the extreme sensitiveness of mind and body, but we must not forget its great hysterical adaptability, wanting in Lach., and its flatulence and reverse peristalsis. They both suffer severe nervous diseases from the checking of discharges, and might come in collision in asthma, whooping cough, and cardialgia, but *Asaf.* would not be thought of in the serious malignant diseases of Lach., nor particularly at the climacteric like Lach.

Belladonna, as intimated before, is also hypersensitive, but this is due to inflammation, which is not the case in Lach. The flushed face, the throbbing carotids, hard and bounding pulse, and wild delirium, so characteristic of Bell., are also not in evidence in Lach. It does not have the characteristic left-sided and left to right peculiarity of Lach., nor the aggravation from suppressed discharges. Notwithstanding its "sleepy but cannot sleep," "starting from sleep as if in a fright," and "moaning and tossing in sleep," it does not have the characteristic aggravation from sleep of Lach., and does not apply to the blood conditions, serious malignant diseases, and typhoid condition of Lach., nor is it particularly suited to the climacteric conditions.

China has as its chief characteristic an excessive sensitiveness of the nervous system, all symptoms being aggravated by the slightest contact, or draught of air, and it has great prostration with neither thirst nor hunger, but it has that marked periodicity wanting in Lach., and does not bear resemblance to Lach. in its serious malignant conditions nor for climacteric troubles. *China* is sleepless, but not < after sleep, and has no preference for the left side. It is an entirely different remedy generally.

Hepar sulphur is also over-sensitive to all external impressions, "the affected part is very sensitive to touch," but is especially so to the slightest cold air, or slightest draught, wherein it is differentiated in croup, etc., from Lach., which

is hypersensitive as to touch only or constriction. Apart from a few respiratory diseases these two remedies would rarely have to be differentiated, because their general scope of action is different. The "< after sleep," "< left side," "< from suppressed discharges" are all absent in Hepar.

Silica also has an extreme sensitiveness to touch, but particularly a decided aggravation from cold air, which latter Lach. does not have. Sil. and Hep. would bear closer analysis for differentiation, being quite similar in this as well as other respects. Incidentally remember that Sil. and Hep. are both very useful in suppurative processes, indeed that is the chief property of each: both are < from cold, and > from warmth, but Hep. has rich thick creamy pus, while in Sil. it is thin, bloody or like bloody water. But apart from the fact that Sil. does not have the "< from sleep," and "< left side," so characteristic of Lach., Sil. and Lach. do not seem to resemble each other much in their scope of action, as viewed from their physiological effects. They do resemble each other considerably in a number of characteristic individual symptoms, and in some similar therapeutic indications. For instance, Lach. is always better when a suppressed discharge returns, and Sil. applies to asthma when due to a suppressed fistulous discharge of long standing. So there are many more parallel symptoms in the various rubrics. And Sil. is also indicated in ulcers, abscesses, carbuncles, cancers, and asthma, like Lach. They are both called for in amenorrhea or menorrhagia, though Lach. applies especially to the climacteric period. However, Sil. does not apply to the malignant septicemia conditions and low typhoid states like Lach. It rather suits scrofulous and rachitic tendencies and when the organic substances are vitiated, even to suppuration. Sil. generally applies to chronic diseases in variance with Lach.

Lastly *Spigelia*—this is another remedy that is decidedly sensitive to touch, and therefore may be compared with Lach. Both these remedies act through the cerebro-spinal nervous system. Spig. does not have any effect upon the blood, but bears its resemblance to Lach. in its nervous phenomena. We don't think of Spig. without thinking of its neuralgia, especially of the fifth nerve, heart and eyes, and here it comes into comparison with Lach. The headache of Spig. is apt to begin in the occiput, spread over the top of the head, and locate over the eye, preferably the left one, like Lach., but in the latter

the pain is at once at the root of the nose or over the eye, and immediately relieved if the nose discharges. The pain in both is very severe, gets worse with the elevation of the sun, and recedes with its setting. The heart of Spig. is with sharp stitching pains, shooting into arm or neck, and violent palpitation; in Lach. a constriction about the heart, and cramp-like pain, and with flushes at the climacteric. These remedies resemble each other in many other ways, even convulsions and vertigo, but remember Spig. is not < after sleep, and is not > when discharges are established: also, because it does not affect the blood, it does not apply to the malignant conditions, nor low typhoid tendencies of Lach.

Of course there are many other remedies that are hypersensitive and these comparisons could go on indefinitely, but I have selected for review those that have the symptom most prominently like Lach., and hope to have illustrated thereby the necessity of recognizing the scope of action of our remedies when differentiating, rather than simply contrasting the remedies, and that it has afforded a pleasant diversion.

THE HOMŒOPATHIC TREATMENT OF HYPERCHLORHYDRIA AND GASTRIC ULCER.

BY

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IT HAS been said that if one suffering from gastric ulcer and its usual accompanying condition, hyperchlorhydria, consult a surgeon, he is eventually cured,—cured surgically. If he consults a medical man, he is eventually cured,—cured medically. On the other hand, Mayo is quoted as saying that after nine medical cures, all chronic cases require direct surgical interference. Others call attention to the etiological relation of chronic appendicitis, and record many cures by means of a simple appendectomy, the surgeon often removing an apparently unoffending appendix with a succeeding cure of the gastric ulcer and its related hyperchlorhydria. We do know that while these ulcers are essentially chronic and slow in healing, they do heal, as evidenced by autopsy.

My idea in writing this brief paper is simply to throw out

a few thoughts or suggestions that present themselves to me after the handling of a goodly number of cases of this rather prevalent disease.

However, I cannot pass to the treatment of this disease without mention of the ingenious diagnostic procedures advanced by Einhorn, especially his string test, and the X-ray work, which I have also had the pleasure of seeing with Wenckabach and Jordan.

All of this excellent work goes to make our symptomatic surmises and chemical analyses definitely positive in the matter of diagnosis, as Dr. Barker and Dr. Frank will bear me out.

Given, then, definite cases of ulcer and hyperchlorhydria, or both, accurately diagnosed, the one striking feature that stands out in my mind is the mentality which presents in nearly all of these cases, namely, the neurasthenic. Attacks of exhaustion, mental and physical exhaustion, with depression or extreme irritability, are almost invariably present.

These attacks of exhaustion, coming at intervals, without any physical overdoing or mental stress, is very definite; and we, as homœopaths, might reasonably argue that it is auto-toxic—that is, due to the hyperchlorhydria or the excessive production of hydrochloric acid.

Exhaustion being one of the leaders among the few symptoms recorded in our materia medica under hydrochloric acid.

Given, then, a disease occurring among those living under strain and high tension, and knowing, as we do, how that the quantity and quality of the gastric secretion are under the control of nervous influences—how that these juices may be increased or diminished under mental stress, should not our treatment be directed to the nervous system, rather than to the gastric condition? I say, yes; and without this, the cure will rarely be well accomplished. It is possible for these lesions to progress to a point where only a gastroenterostomy is indicated; but, as a rule, we are safe in making a thorough trial along the lines I suggest: First, rest of mind and body under care-free conditions; for without this, all is without result. Second, an antacid diet—I will not go into this, for it is now well laid down in the text-books. Third, the use of remedies directed against the nerve-exhaustion, and not against the chemical over-production directly.

The foremost of these, I hold to be *Anacardium*. Symptomatically, it has the perfect picture of the nervous hypo-

chondriac, with distracting headaches, epigastric hunger pains, and nervous depletion; faintness, relieved by food. What better picture of this disease could one have? I would caution against giving this remedy in the form of alcoholic solutions on cane-sugar discs. On an empty stomach, the sugar and alcohol, even in small quantity, increase the acidity. Anacardium, I have grown to esteem the great American neurasthenic remedy. Magnesia phosphoricum and nux vomica, with their well-known indications, rank next in importance. Outside of these remedies, I have found use for very few, unless particularly indicated; but without prolonged rest and antacid diet, all will fail.

Combined with rest, complete at first, and later for only part of the afternoon, the hyperchlorhydria will be controlled; and the ulcer, no longer bathed in this irritating medium, has a good chance for healing. In other words, the point I wish to make is that without the control of the acidity through the nervous system, we cannot expect lasting results.

THE CLINICAL ASPECT OF TUBERCULOSIS IN THE AGED.

BY

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DURING the past, the attention of the medical profession in relation to tuberculosis has been riveted upon the disease as occurring in the child and young adult; with special reference to early diagnosis and treatment. The exhibition of the disease in the aged has been very markedly neglected, such cases being completely unrecognized.

Laennec in 1826, comments upon the frequency of tuberculosis in the aged. From 1863 to 1905, the majority of such work was done by a group of French clinicians. Since that time little investigation has been carried on in the study of tuberculosis in the aged. The most recent works on pulmonary diseases, and a work on diseases of the aged devotes only a few lines to this practical subject.

Relative to the frequency of the disease, all cases past sixty years of age, may be considered in the aged class.

Barrè of Paris, in 1895, found in a period of years from 1881 to 1893, 92,141 deaths from tuberculosis, 2.29 per cent were over sixty years of age. Hawes of the Massachusetts State Sanitarium, found 74 cases in 6832, or 1.08 per cent. These percentages appear entirely too low when we consider the difficulty of diagnosis and the large number which go unrecognized, hence, it would seem that an average of three per cent would be none too high.

In the State of Pennsylvania, there are approximately 40,000 cases of known active tuberculosis, which would mean that there are about 1200 subjects classed in the aged who are a menace to the public.

I see no reason from the above why we should not direct some attention to the early recognition and clinical study of the disease as occurring in the aged.

We always ask as a routine question in history taking, the presence of tuberculosis in any member of the family, or its earlier manifestations as seen in childhood, and completely ignore the fact as to whether the patient ever lived with an aged subject supposed to have suffered from chronic bronchitis, emphysema or asthma.

In considering the etiological factors of such cases, namely, tuberculosis in the aged, the question arises, are such cases the result of the continuation or awakening of an old tubercular lesion, rather than a superimposed tubercular infection upon a primary inflammatory condition. Barrè is of the opinion that it is a sequel to chronic bronchitis or dilated bronchial tubes, and less often the awakening of a quiescent lesion. Other observers claim that it is rarely a primary infection, and usually the result of some primary inflammatory condition of the lung.

The clinical conditions to be studied in their etiologic relation are especially those of chronic bronchitis, emphysema and asthma. I am inclined to feel from observation that cases of asthma and emphysema that are truly primary, or what we may term idiopathic, do not as a rule become tubercular although such a possibility always exists.

By far the greater number of cases of emphysema and asthma encountered have their inception in a chronic bronchitis and are truly secondary conditions and, when going on to the

development of impaired cardiac function, which is the natural sequence, the vicious circle is completed.

Granting that chronic bronchitis is a most frequent cause of emphysema and asthma, it is an easy matter to conclude that a large percentage of such cases must, as a matter of fact be tubercular. It is not saying too much to make the statement that at least 75 per cent of the cases of chronic bronchitis, diagnosed as such, with its inevitable emphysema and asthmatic conditions, are tubercular in character. These figures are based upon a study of cases made in the dispensary of Hahnemann Hospital, Philadelphia, Pa. The records recorded from thirty to forty cases of chronic bronchitis a month with frequent cases of emphysema and asthma. After more careful work and systematic examination of such patients was made, the diagnosis of chronic bronchitis diminished 75 per cent, while the number of cases of tuberculosis increased in almost the same ratio. The conditions of emphysema and asthma as a primary condition, also evidenced a diminution in the number recorded.

The course and symptomatology vary very markedly from tuberculosis as seen in the young adult or child. Fever is not common, it being rarely present, subnormal temperature being the rule. At times an inverse type of temperature is seen. This should always arouse suspicion of a tubercular process. The pulse is variable and cannot be relied upon as a diagnostic factor, as seen in younger subjects, with its increased rate and low tension. Dyspnoea or shortness of breath is usually quite marked with some cyanosis. A peculiarity of these aged subjects is the tendency to anorexia, and the emaciation and prostration which depends, to a certain extent upon it. These are common manifestations of old age and would not lead one astray if the local diseases did not pursue a different course and lead to different symptoms than those usually observed in young consumptives.

Cough is variable, depending on the amount of secretion and associate catarrhal conditions. Blood spitting is often present, rarely large in amount or causing alarming symptoms. It may be very frequent and small; repeated attacks of blood spitting are very common and quite diagnostic of fibroid phthisis. Gastric manifestations are not uncommon. Often a history of what is termed "stomach cough," has persisted for years, and such information should always make one think of the pos-

sibility of a tubercular condition as the underlying cause. Attacks of diarrhoea that are obstinate and at times almost uncontrollable have been observed and it is not uncommon to find the presence of an albuminuria.

The course of the disease is a slow, extremely chronic, progressive one, but with tendency to healing. This is in all probability due to a certain acquired immunity and loss of virulence of the organism, which is seen in the fact that comparatively large lesions in the aged cause only slight constitutional disturbance as compared to the manifestations of the disease in younger subjects. As regards a cure, this cannot be expected. These subjects frequently live for years in apparent comfort as semi-invalids, death frequently being due to other causes, notably acute pneumonia.

The diagnosis is difficult due to the fact of the atypical course and clinical manifestations of the disease. The physical signs are very changeable due to the presence of secondary changes, namely, chronic bronchitis, emphysema and asthma, which completely overshadow and mask the diagnostic signs of consolidation. Percussion and auscultation are extremely variable so that signs found one day are no longer demonstrable a few days later. Rales which are transient in character and of varying types are heard generally over the chest. If distinctly localized rales are detected, these are very significant and should always suggest tuberculosis. Inspection, aside from the lagging of one side of the chest which may be suggestive with palpation, reveal few signs of significance.

d'Espine's sign, the writer has found useful in these cases of the aged, as spoken of by several observers. It consists of the presence of whispered bronchophony as elicited upon auscultation over the spine, from the seventh cervical down to the fourth dorsal. The lower down this is observed, the more positive the evidence. This manifestation is the result of the enlargement of cervical and bronchial glands due to inflammatory processes, and in such cases tubercular in character.

While d'Espine's sign is looked upon as almost pathognomonic of tuberculosis in children, I do not feel the same claim can be made for it in the aged. But its presence in those chronic cases of the aged speaks very conclusively for a tubercular process.

Tuberculin tests as an aid to diagnosis are disappointing and of little value in the aged. In suspected phthisis the defective

physical signs should be supplemented by an examination with the X-Ray, best by a radiograph. This may be of great help in determining consolidation but not its exact nature.

Finally the sputum must be carefully and repeatedly examined for the presence of tubercle bacilli, more so than in younger subjects. Their discovery is often made only after much careful examination, while in other the bacilli are present in large numbers. This is practically the only positive evidence that we have for a diagnosis, this opinion is shared by competent observers.

From this brief clinical study, I think it should be impressed upon our minds that all cases of chronic bronchitis, emphysema and asthma should have frequent examinations of the sputum made for the detection or the presence of tubercle bacilli.

The treatment of this condition has been much neglected. They form a great factor in the dissemination of the disease, and proper care should be instituted for the sake of those surrounding them. For these reasons if for no other, the making of an early and correct diagnosis of these cases has great practical significance. In conclusion, let me state—we examine the children early and carefully. Why not the aged?

DISCUSSION.

DR. SCHAFFLE: I should like to endorse what Dr. Golden has said. We find in the sanitarium a much larger proportion of aged subjects than the general practitioner would realize. The cases have usually been looked upon as rheumatic. I would certainly endorse what has been said in regard to more frequent sputum examinations, a more careful eliciting of the history, and a more perfect physical examination. We find in the aged a decreased vitality. In the young, we have growing organs; and in the old, organs running down. The individual, also, is less likely to be amenable to discipline. These old people are more or less "set in their ways;" and I think the question of how to treat them is a very serious problem.

DR. STILES: I should like to speak of a phase of the public health side of the question of tuberculosis in the aged, which has struck me very forcibly; and that is the attitude of the family towards the case of tuberculosis in the aged, as compared with the attitude of the family towards the case of tuberculosis in a younger member of the family. I have heard a family say, "Well you must not let Grandma know that

she has tuberculosis. If it were in one of the younger members of the family, we would just as leave have you tell it; but Grandma has only a few years to live, and we want her to live in happiness. If you tell her that she has tuberculosis, it will shorten her days." That matter comes up so frequently in the experience of some of us that in our public health work we feel like emphasizing very strenuously the points that Dr. Golden has brought out.

DR. G. HARLAN WELLS, Philadelphia: I think that it is important for us, in considering this subject, to bear in mind the difficulties that are met with in arriving at a diagnosis of tuberculosis in aged persons. A chronic or long-lasting cough in a younger person is so commonly tuberculosis that almost any physician who has a patient that keeps on coughing month after month is pretty sure to realize that there is a strong probability of this disease being present; but in aged people, on account of the frequency of chronic bronchitis of non-tuberculous origin, physicians are often satisfied to let the cough run on for months, and even years, with the idea that it must be emphysema or secondary to some cardiac condition, or to a simple chronic bronchitis. When we come to examine these patients for physical signs, even when tuberculosis is present, emphysema commonly exists and the physical signs may be extremely difficult to elicit; and the moist rales, so often of diagnostic value in suspected tuberculosis, are so commonly found in connection with the other diseases mentioned that we hardly feel like making a diagnosis on them alone. Also, in the aged, the febrile reaction is not a factor. In these old people with tuberculosis, there is frequently no fever. Therefore, we have sometimes to resort to extraordinary steps to make a correct diagnosis. I think that the frequent examinations of the sputum should be strongly emphasized. When we examine case after case, and find no tubercle bacilli in the sputum, we are likely to become discouraged and feel that this examination is of no value; yet the finding of these organisms is the most positive diagnostic sign that we can get. If we fail to find it in many cases, we are amply rewarded for our work by finding it in some. I believe that the X-ray examination is also of great value in the aged when the physical signs are uncertain or indefinite. Many cases of emphysema, etc., are excluded by X-ray examination. I feel that the two important points in the diagnosis of tuberculosis in the aged are: a careful examination of the sputum and a careful X-ray examination of the chest.

SOME GENERAL REMARKS ON THE DUODENUM AND ITS DISEASES.

BY

G. H. BICKLEY, A.M., M.D.

(Read before the Schuylkill County Homœopathic Medical Society).

WHILE at first glance the diseases of the duodenum may seem relatively unimportant, a little thought will show that the area embraced by this twelve finger width, horseshoe curve of the first portion of the intestinal tract plays a most vital part in the human economy. Continuous with the pylorus, the ascending portion forms the cap of the duodenum which, by means of the bismuth meal, has been made the subject of investigation by the roentgenologist. The descending portion embraces the head of the pancreas, touching lower border of the liver and gall bladder, receiving the ducts from the liver and pancreas. The transverse portion passes from the right side at the level of the third lumbar vertebra across the spine and aorta to unite with the jejunum.

This part of the gut has, within the last decade, received most painstaking study by both internist and surgeon. Though the duodenal diseases are often associated with affections of the stomach, liver and pancreas, the recognition of duodenal derangements offers a fertile field for diagnostic acumen and therapeutic skill. Physiologically considered it plays an important role in digestion. It is in the duodenum that the secretion of starling is formed which in turn, activates pancreatic and biliary secretion. It is here that the acid chyme is neutralized or rendered alkaline and by its degree of alkalinity determines the opening of the pyloric orifice of the stomach, and here we have a key to many of the cases of pylorospasm (so often diagnosed simply as acute indigestion) in the imbalance of the gastric acidity and duodenal alkalinity, for the pylorus will not open if there be an excess of acid on the duodenal side. In the duodenum the bile empties, and by its action on the steapsin, emulsifies fats. Here, too, is secreted the enterokinase, which in its turn, activates the trypsinogen, the proteolytic enzyme of the pancreatic juice.

This wonderful interdependence of function, while furnishing a never ending study in physiological chemistry, increases

the therapist's task when one of the cogs of this system slips.

In connection with the nerve supply of the gastro-intestinal tract, let me cite the well known instance of what results from irritation of the sympathetic nerves which supply it. An inflammatory erosion of the mucous membrane of the appendix or the irritation of retained foreign substances in the appendix will cause secretory disturbance of stomach or intestines (thus we often find it a cause of hyperchlorhydria) while adhesions about the appendix involving, of course, the peritoneal coat, will frequently cause lessened gastric and intestinal motility. This explains why we find gastric myasthenia and intestinal stasis in this latter condition.

There are two pathological conditions of the duodenum which seem full of interest to the busy practitioner—the catarrhal and the ulcerative. The acute catarrhal duodenitis with its concomitant gastritis is a disease entity which has long been easily recognized by its symptom of jaundice and its frequent incidence in the young.

If any number of physicians were asked to give their ideas of the etiology and pathology of biliousness we would probably have as many different views—from the simple hepatic torpidity to the gastro-hepato-intestinal toxemia of Quintard.

Some observers who have studied this varied symptom-complex, have found a definite pathology in a certain proportion of cases.

A patient who finds himself slowing up in his physical and mental output, who suffers from headache, malaise, mental irritability and fatigue, fitful appetite, whose sclera and skin are frequently icteroid, has been found to suffer from sub-acute or chronic duodenitis.

Here the examination of the feces furnishes the aid to diagnosis by showing the amount of putrefaction in the stool and revealing the meat fibres (the most easily recognized of the proteid foods) largely undigested. This catarrhal condition so lessens the proteolytic function of the pancreatic juice (maybe by decreasing the secretion of enterokinase) that proteid digestion is materially impaired. The treatment resolves itself into a restriction of proteids in the diet, properly regulated exercise, mineral waters and the indicated remedy.

The most important pathological condition of the duodenum is ulcer. The theories of the causation of the peptic ulceration

of the gastro intestinal mucosa would fill a book and then some more. Boiled down, we can be on the side of the majority if we believe in a local lowered vital resistance of the mucosa, from traumatic, irritative (coarse food), thermal, bacterial or infective, circulatory (thrombotic embolic, etc.), inflammatory causes and a gastric juice rich in HCL.

Whatever the surgeons say about their findings in ulcers coming to operation, it is true that the typical peptic ulcers are found where free HCL is present, namely: in the stomach, the lower end of the oesophagus and the duodenum. Since the operation of gastro enterostomy has become so popular, peptic ulcers have been found in the jejunum near the stoma of the gastro enterostomy; and is it not true that surgeons operate ulcers that have resisted medical treatment and where secondary catarrhal changes in the gastric mucosa and pyloric stenosis with ectasia will account for the lower or even absent free HCL content. The acute ulcers seen by the surgeons are usually those which have perforated, where analysis of gastric contents by reason of the critical condition of the patient cannot be performed.

I accept the claims of the medical gastro enterologists that over 90 per cent of peptic ulcers are found in connection with hyperchlorhydria or have a history, more or less recent, of hyperacidity. In spite of the advances made in technique and the information obtained by the test meal, greater stress than ever is laid on the value of the proper clinical history. This is apparent when you analyze the symptoms.

Duodenal ulcers are clinically less frequent than gastric in proportion of 1 to 10, though from an operative standpoint they are more evenly divided. While no age is exempt, the greatest frequency occurs in the second to fourth decades of life. Of intestinal ulcers 90 per cent are found in the first portion of the duodenum—mostly all extending to or very near the pylorus, showing again the influence of the acid chyme on the ulcerative process. It is not our intention to discuss acute ulceration following burns or the ulcers of uræmia or tuberculosis or the few occurring in the newborn, but rather consider the ordinary type of chronic ulcer. With a patient of fair intelligence a very definite history can be obtained. The history may date back years—as Moynihan expresses it “as long as they can remember” or “all my life.” The symptoms at first were insidious, slight distress, weight, distention after meals.

Immediately after a meal there is relief but the pain occurs in two, three, four or six hours. When pain comes on earlier than two hours it shows the presence of adhesions about the duodenum or a beginning stenosis. The character of the meal seems to determine the time of the occurrence of the pain. A liquid meal passing through the stomach quickly causes an earlier occurrence of the pain than a full or coarse meal. As a rule, the pain comes on gradually, increases gradually, becoming more severe and accompanied by a sense of fullness, distention and an all-gone feeling and often there is an eructation of bitter gas or fluid which affords relief. The interval between the taking of food and the onset of the pain is very constant if the character and quantity of food remains the same. The pain that wakens the patient at night at two o'clock is quite common. These pains are usually relieved by eating. The cramplike pain complained of at times is due to spasm of the pylorus which at times may be protective. As a rule, the appetite is good. Vomiting is rather infrequent and is rarely present until stenosis is present. Moynihan says that the majority of cases operated upon by him had never vomited. The attacks are characterized by marked remissions and exacerbations. Patients say that recurrences have been due to exposure or to dietetic errors therefore, these attacks are more frequent in the winter months. In the summer while enjoying freedom from cares and living an out-of-door life the symptoms have disappeared. Do these facts lead us to any but one conclusion, viz: that the pain is due to the irritation of the free HCL of the gastric juice. By repeating analysis of gastric contents we know the time at which there is greatest excess of free HCL and it corresponds to the time of the appearance of the pain in duodenal ulcer. The same causes that are active in relieving or aggravating the hyperchlorhydria relieve the pain of duodenal ulcer. Remember too, that the amount of HCL which in one patient will produce subjective symptoms will be innocuous in another. These facts have lead to the following postulates: gastro-succorrhœa means ulcer, either gastric or duodenal; recurrent attacks of hyperchlorhydria means ulcer.

When the ulcer ceases to be active and scar tissue is formed there is a different picture. We have the symptoms of stenosis with the resulting gastric dilatation. Hemorrhage is now regarded as a late complication.

Occult blood in the stool is present in a very large per cent of active ulcers.

The points of pressure sensitiveness anteriorly and posteriorly may or may not be present.

I believe that localized points of tenderness are only present when the ulcer has reached the peritoneum or adhesions are present. Some differentiating points from gastric ulcer are the earlier occurrence of the pain, the greater frequency of the vomiting and hematemesis of gastric ulcer.

It has been claimed from the frequency with which scars are found at autopsy that only one out of four ulcers have been diagnosed during life.

Our examination of the patient should exclude chronic appendicitis, cholelithiasis, chronic pancreatitis, Dietl's crisis in nephroptosis, and the gastric crisis of tabes dorsalis. Acute perforation of duodenal ulcer is such an overwhelming catastrophe, that once seen it is not forgotten. The sudden onset of excruciating, agonizing pain. The patient is prostrate with agony. He is pale and faint and anxious. His face is drawn and pinched. He is bathed in sweat. Breathing is short and rapid. The abdomen is exquisitely sensitive and the rigidity most marked. The most sensitive spot will be found usually to the right above the umbilicus. Vomiting may occur. At this stage I have been impressed by the character of the pulse, and were it not for the intensity of the other symptoms it would very possibly mislead the observer. In the first few hours the pulse is usually of good quality and not unduly rapid. The escaped fluid soon makes its way down to the upper surface of the mesocolon, to the hepatic flexure and down the outer surface of the ascending colon into the iliac fossa and the symptoms are seen which lead to so many cases being mistaken for ruptured appendix.

In the absence of early surgical interference the picture becomes one of general septic peritonitis. The conditions from which this duodenal perforation must most frequently be differentiated are, gastric perforation, acute pancreatitis, appendicitis and pneumonia with diaphragmatic pleurisy.

To show the infrequency of primary cancer of the duodenum I quote the latest statistics of William Mayo.

He reports that out of 1498 operations for carcinoma of the gastro intestinal tract:

966 involved the stomach
16 the small intestines
216 the large intestines
223 the rectum

Only 5 of the 16 cases of cancer of the small intestines were in the duodenum and none were operable.

SPIRIT-WEED.—*Dr. Byron to C. Hering.*—Monticello, Florida. November 3rd, 1852.

With the above I send you a plant, known among the Indians as the "Spirit Weed", Which means an exciting weed; root and flowers are the parts used by the natives to produce as they say "*a shining eye and a big face*" which means a brilliant eye and a flushed and swelled face. They use it by chewing and in water. Those using it look bold, "big" and "talk loud", speak eloquently. As soon as its effects pass away the user becomes stupid and very irritable. I have given it as a medicine in several instances.

Case.—Miss B., aged 23, had inflammation of the lungs, pulse 130, cheeks flushed like with hectic persons; eyes very bright; out of her mind, very thirsty; pains in the chest.

1st day aconite and belladonna alternately. Pulse 95, her mind restored. 2nd day, the same, not much improvement. 3rd. day, rhus and aconite alternately every two hours. Pulse 90, less pain in chest, hands dry, cough (expectoration like bricks and like matter). 4th day, bryonia ---pulse 100, cough not so dry, less pain but derangement of mind and a chill. 5th day, arsenicum and six hours afterwards carbo vegetabilis (12th). Pulse 110, breathing more freely, no pain, fullness of the head, mouth very dry. All this time the eyes were unnaturally bright, there was a red-flushed fact, without losing it for a moment.

Here I made the first trial in giving this "spirit-weed", and in 9 hours the face and eyes had lost their redness and brilliancy, in 36 hours the eyes and face went into a sallow or life-like appearance. In this stage aconite had the best influence. On the 12th day my patient was convalescent: if it had not been for this weed I do not know what it might have resulted in. I have used the same medicine in two other cases where its efficacy was equally true and prompt.

(A few minor corrections in spelling and diction in this letter) *From the von Lippe manuscripts.*

EDITORIAL

HOMŒOPATHIC ACTIVITIES IN PENNSYLVANIA.

At the beginning of the active season of medical work, it is pleasing to note that the homœopathic profession and the homœopathic institutions are wide-awake and have started a variety of activities that promise well for the future of our School.

It is encouraging to learn that the Hahnemann Medical College of Philadelphia has started the year with about forty new students and that the standard of those entering is vastly superior to that of past years. The efforts of Dean Pearson have infused a spirit of enthusiasm for hard work among the members of the faculty and the student body and the prospects for success in the old college have never been brighter.

Plans have been formulated to have a representative of the faculty present at every medical meeting of any importance in Pennsylvania and neighboring states, to bring to the alumni information regarding medical education and to arouse enthusiasm and interest in their alma mater. It is hoped that the secretaries of the various local societies and the alumni in general will keep the Dean informed of the date and place of meetings where a representative from the college would be desired and it is believed that all such requests can be complied with as a large number of good speakers have volunteered to serve in connection with this work. Meetings will also be held in connection at a number of colleges and other educational institutions throughout the state for the purpose of attracting students. This plan was carried out to a limited degree last year and met with most encouraging results. Four students were secured for the freshman class from a single meeting held last winter.

The new president of our State Society, Dr. J. M. Heimbach, is certainly on the job. Following the By-law passed

at the recent session of the State Society, the new officers assumed their duties on November 1st and, our wide-awake president has already had a meeting of the Board of Trustees and is working on the committees and making plans for a campaign during the coming winter. The good work so efficiently started by our retiring president, Dr. Books, along the lines of County and District organization is to be actively carried out. Dr. Heimbach is desirous that the State Society should be active all the year round and not merely during September of each year.

It has been a struggle at times for our colleges and other institutions to meet the increasing demands that have been made upon them from various sources, but it is pleasing to note the stimulating effect of the more thorough and more scientific work that is being carried out in all of our homœopathic institutions. Such work merits, and is bound to win, the approbation of every thinking member of the medical profession and of the public at large.

G. H. W.

MODERN MILITARY SURGERY.

THE present conflict in Europe has opened up numerous opportunities for surgical investigation and has served as the testing ground of modern surgical technique. It is interesting to note that the percentage of wounded soldiers developing tetanus has been very high: 6.6 per thousand as compared with 1.5 per thousand in the Crimean War and 2.0 in the American Civil War. This increased frequency of tetanus is attributed to the fact that the fighting has been done so largely in the trenches. The soldiers' stockings become permeated with soil and the nearly frozen condition of the feet during the winter months predisposes to infection by the organisms of tetanus.

Crile, who has spent some months at the American Ambulance Hospital at Paris, is authority for the statement that in military surgery asepsis has failed as has anti-sepsis. The wounds from rifle bullets have been found to be comparatively easy to handle as the wound is clean cut and rarely contaminated by clothing. Shrapnel and shell wounds almost always contain pieces of the clothing and

this fact, in addition to the contusion of the tissue produced by the injury, has resulted in a large percentage of infections in this class of patients.

The treatment of infected wounds is practically the same as was employed thirty years ago. The best results seemed to be obtained by the application of warm moist dressings immersed in hypertonic solutions of potassium citrate and sodium chloride. In many cases the open air treatment has given better results than the application of dressings. Hot packs, free drainage and rest, seem to constitute the best treatment that has been devised up to the present time.

As regards the wounds of the internal organs, it has been found that penetrating rifle wounds of the chest usually do well. On the contrary, injuries to the chest due to shrapnel, almost always result in the development of empyema. The percentage of fatalities has been very high among those receiving wounds in the abdomen. Immediate operation usually ends fatally even in the hands of the most skillful surgeon both being due to shock and infection. Wounds of the bladder and ureter are also highly fatal.

It has been interesting to note that fractures of the shafts of the bones almost invariably heal even though the shaft be widely shattered and infection be present. One surgeon states that with time and patience, any bone will repair itself even though the destruction be extensive.

There has of course been comparatively little opportunity to give a fair trial to the use of vaccines and serums on account of the large number of cases that have been handled and the difficulties met with in deciding upon the exact type of infection. So far at least it has not been found practical to use them in any extensive scale.

G. H. W.

ANAEROBIC BACTERIA IN THEIR RELATION TO PUERPERAL INFECTION.—Hüßy's (Basel) studies of anerobic bacteria with reference to puerperal infection have led him to conclude that bacteriological examinations for anerobic bacteria are important in seeking the cause of puerperal fever. The anaerobic bacteria which are particularly virulent are those of tetanus, anerobic streptococci and staphylococci and bacillus emphysematosae, but these are among the rarer causes. The more frequent, gas-forming obligat anaerobic bacilli give a very favorable prognosis. Mixed infections of anaerobic bacilli and aerobic germs of every sort may be regarded as less dangerous, both in the lochia and in the blood, though rare in the latter.—*Monnatsschr. f. G. u. G.* Vol. 41-299.

GLEANINGS

TRANSFUSION OF BLOOD.—Because of the greatly simplified technique and the, at least theoretical, advantages which have seemed to accrue from blood transfusion, this procedure has been one of wide use, much wider than current literature would lead one to suppose, nor has the profession at large definitely and clearly determined the indications for this therapeutic agency, the results which may be expected from it, or the dangers attendant upon its use. The paper of Citenberg and Libman (*American Journal of the Medical Sciences*, July, 1915) is therefore of distinct service, noting as it does that the test for agglutination and hemolysis between blood of donor and of patient are reliable. The dangers of excessive transfusion can be easily avoided. Basing their study on 212 transfusions, there were 42 cases in which this treatment saved life. Of these 29 recovered entirely and were discharged well. Thirteen were saved from immediate death, but continued to suffer from some chronic condition which could not be cured by transfusion, such as pernicious anemia, leukemia, etc. Nearly all the 29 rescued from immediate death were cases of hemorrhage.

The cases in which transfusion was apparently life-saving were instances of acute anemia from hemorrhage, hemorrhagic diathesis, whether hereditary or acquired, grave chronic anemias, and poisoning. There were 43 cases cured or greatly benefited, but were not in desperate condition at the time of transfusion. These were patients whose general condition had been seriously impaired by chronic disease. Most of them ultimately made complete recoveries.

There were 104 cases in which transfusion did no good. There is a first group of 28 cases which improved for a short time, but died subsequently from continuation of the original disease. These included a considerable variety of diseases, chief among which were malignant tumors, pernicious anemia, subacute streptococcus endocarditis, dysentery, typhoid fever, and pyogenic infections. These were all cases which lived from several days to one and a half years after transfusion.

The second group of the patients who died consisted of 23 cases of some disease of itself so grave that transfusion could not have been expected to do much good, and was only resorted to as a desperate hope. These included a great variety of pathological conditions ranging from typhoid perforation to hemorrhagic diphtheria, diabetic coma, and purpura hemorrhagica. There were also three cases of hemorrhage in typhoid fever.

Concerning transfusion for simple hemorrhage, there can be no doubt as to the life-saving power of the method. It not only supplies the lost blood, but checks continuance of the bleeding. Indeed the authors have advised that in all typhoid cases the first appearance of blood in the stools

should be an indication to make preparations so that a transfusion can be done, if needed, at very short notice.

As preliminary to surgical operation there were 33 preoperative transfusions, in 13 of which the result was decisive and the patient recovered.

For shock there were seven transfusions. All the patients died within an hour to five days, from which the authors have deduced the conclusion that transfusion is not to be relied upon as a remedy for pure shock. These transfusions were all done late.

Concerning the cure of hemorrhagic conditions, for typical purpura hemorrhagica in which the number of blood-plates is greatly decreased, but the coagulation of the blood is generally unimpaired, there were twelve transfusions in nine cases. Two died, seven recovered. In four of these cases the cessation of hemorrhage was prompt and complete; in the other three the cessation of hemorrhage after transfusion was not complete.

Concerning hemophilia, transfusion may be fairly spoken of as specific therapy. It supplies the patient's blood with the element lacking for the production of coagulation. In five out of six hemophilics transfusion checked the hemorrhage promptly and the patients regained good health. It is suggested that every individual known to have hemophilia ought to have at command several persons whose blood by previous tests is known to be compatible with his, and who are willing when called upon to give blood for transfusion. Thus it may be made possible for the majority of hemophilics to lead a life of normal duration. The prophylactic effect of small transfusions (25 to 50 Cc.) repeated at long intervals (one to three months) is warmly commended.

Concerning the use of serum in hemorrhage cases, in spite of the occasional cessation of bleeding after such injections, Ottenberg and Libman have not been able to convince themselves that this agent has any effect. Indeed in two hemophilic cases not transfused the coagulation time was no shorter than before serum injections. Serum applied locally to small bleeding points, or defibrinated blood, has undoubtedly a distinct hemostatic action.

As to secondary hemorrhagic diseases—*i e.*, those incident to severe infections, pernicious anemia, and intoxications—transfusion may check the hemorrhage, but will not necessarily cure the disease. There were 13 transfusions in 12 cases of prolonged obstructive jaundice. The result seems to show that postoperative hemorrhage due to cholemia is as a rule not checked by transfusion, and moreover precautionary transfusion before operation may fail to prevent the postoperative hemorrhage.

In 35 transfusions in 25 cases of undoubted pernicious anemia there were no cures and 14 remissions. Transfusion is never curative in pernicious anemia, but it is the best remedy for the disease and leads to remissions in about one-half the cases.

Upon chronic lymphatic leukemia it does exert an influence, especially if repeated. In prolonged infections the authors hold that the transfusion of normal blood may be extremely valuable and should not be too long delayed. In acute poisoning transfusion would only seem to be indicated when a considerable part of the poisoning is contained in or has acted upon the blood. Among poisons which act in this way are carbon monoxide, hydrocyanic acid, benzol, nitrobenzol, and possibly carbolic acid. In such

cases, of course, a large phlebotomy must be done before or during the transfusion.

As to the dangers of the method of transfusion, hemolysis or agglutination of the red blood cells of either donor or patient can be excluded by previous laboratory tests. The donor should be free of syphilis and tuberculosis, and big and strong, though not fat. As for the technique the authors prefer the syringe method. For the repair of hemorrhage less blood suffices than that which was lost. In hemorrhagic diseases a relatively small transfusion (500 Cc. for an adult) is usually large enough unless the amount of blood already lost has been very large. For pernicious anemia 500 to 1000 Cc. is enough. In the various forms of poisoning, especially in gas poisoning, a large phlebotomy followed by a very large transfusion would seem to be indicated. In chronic conditions it is undoubted that transfusion is desirable.

From the surgeon's standpoint transfusion seems clearly serviceable for one condition—that is hemorrhage.—*Therapeutic Gazette*.

THE INTERNAL SECRETIONS IN "RUN-DOWN CONDITIONS."—Many a chronic and intractable disorder is due to an overlooked defect in the production of the hormones of the internal secretory glands. Increasingly greater stress is being laid upon the importance of these chemical messengers and there is now little doubt that in health as well as in disease they regulate and correlate the metabolic activities of the body.

Many a patient under treatment for some more or less obscure trouble has associated with it a condition of hormone deficiency; for when an individual is "run-down" with the usual manifestations of this condition—nerves on edge, oxidation poor, elimination low, muscles easily tired out, and, almost invariably, the digestion and assimilation faulty—it is not conceivable that when practically all the other activities of the body are below par, the internal secretory organs are working normally and producing their necessary quota of hormones. *In fact, this lack is often the sole cause of many conditions of this character*, and pluri-glandular insufficiency should be sought for more generally than it is at present, and its importance appreciated in a more practical way.

It would almost seem that the importance of hormone stimuli is overlooked—at least by many physicians. When one realizes the fact that these hormones are stable chemical substances of a non-colloid nature produced and found in the normal metabolism of certain cells (usually of the ductless glands), and that they are carried by the blood or lymph to various remote organs where they excite numerous manifestations of physiologic activity, this correlation between the organ of origin of the hormone and the organ or organs thus stimulated assumes considerable importance. "Hormones are to physiology what radium is to chemistry."

Among the numerous internal secretory principles are those that exert a cell-stimulative action on the hormones proper, and those that exert a retarding action—chalones (Gr. I restrain) first mentioned by Sir Edward Schafer. The scope of action of the "original hormone"—secretin—seems to be limited entirely to the alimentary tract, but others like the thyroid and gonad hormones exert a tonic action which does not seem to be limited to any special cells or functions, but influences the body as a whole even

though this stimulating action may seem to be more especially concerned first with the corresponding organs—the thyroid or gonads,—and also the other internal secretory organs. Now we know according to Hallion's law of homo-stimulation "The Essential Basis of Organotherapy" (See *American Medicine*, April, 1915, page 253) that we can enhance the activity of the various internal secretory glands and hence in rundown conditions it would seem to be an advantage to attempt to stimulate those organs which under normal circumstances control tone and general cell activity of the body.

Theoretically this sounds very plausible, and its practical application is equally encouraging even though the administration of combinations of gland extracts is often empirical, for it is not always possible to bring forward definite proof as to whether the ductless glands are not as active as they should be, and if so, which of them and to what extent. It is a procedure that has secured results in a large class of cases, that has been referred to a number of times in French, Italian and English literature, and its advantages can only be gauged, not by the seeming reasonableness of the procedure or by critical unreasonableness to the skeptic, but by the only test available under the circumstances—the test of results.

The administrations of combinations of the thyroid, gonads and perhaps the pituitary gland (for this latter organ exerts a remarkable tonic influence upon all unstriped muscle including that of the cardio-vascular system and the intestines) is likely to benefit run-down conditions by the general stimulating action that the units of this combination exert upon the organs corresponding to those from which it is made, as well as upon the metabolism generally. This increased cellular activity is of considerable advantage—sometimes the results obtained from this form of treatment are remarkable, for not only is the sum total of the tonic hormones increased, but the increased cell activity augments the response of the organism to such other therapeutic procedures as may be given simultaneously.

A number of writers have drawn attention to the importance of certain of the ductless glands in the causation and treatment of the host of functionally neurotic and mental asthenic conditions which are manifestations of run-down cellular action. Among these will be found such alienists as von Frankl-Hochwart, Laignel-Lavastine, Delille, together with such internists as Martinet, Gilbert and Lorand and several others of equal prominence.

Of course one cannot expect spectacular results in every case, although it is surprising how frequently the results far exceed expectations, nor can we expect good results in every case thus treated, but the prospect of success is sufficiently alluring to warrant the application of pluri-glandular therapy as a part of the treatment of all convalescent, neurasthenic and run-down cases.—*American Medicine*.

BLOOD PRESSURE, URINARY FINDINGS, AND DIFFERENTIAL BLOOD COUNTS IN 662 YOUNG MEN.—R. I. Lee points out that there are few absolute standards for the normal in clinical medicine, and that physicians are better acquainted with disease and its variations than with health and its variations. The author then reports on the physical examination of the

entire freshman class in Harvard University. Six hundred and sixty-two freshmen with the average age of 18 years, average height of 5 feet, 8 inches, and average weight without clothes, of 143 pounds, were each carefully examined once. He concludes that among young male adults in the usual condition of health a single determination of the systolic blood pressure frequently gives readings that are regarded as abnormal according to the usual standards. This deviation from the usual standard may be considerable and may be present on several occasions. In the absence of other abnormal findings moderate increase of systolic blood pressure seems to be of no significance. The diastolic blood pressure is much less subject to variation and is of considerable value in offering a control on an abnormal systolic pressure. Albuminuria was present in five per cent. of this group, and in only one case was there additional evidence of a true nephritis. Albuminuria in young male adults may be permanent, orthostatic or transitory, and is apparently of no serious significance. Glycosuria is unusual and in one case particularly, and apparently in another, was more than transitory and seemed associated with disturbed metabolism. The differential counts of the leucocytes of the blood in this group confirm our accepted standard for the normal.—*Boston Med. and Surg. Journal.*

INSANITY AND THE WAR.—The horrors of war from every conceivable standpoint have been vividly pictured during the past year. From the aspect of public health it was pointed out that in war it is not the survival of the fittest but the survival of the most unfit. It is the flower of the race that is stamped out or deprived of, the faculty ever to bloom again. It is the weeds, at any rate physically, that are left. A nation which loses its best in war necessarily deteriorates, for those who are left are deficient in vitality and are unable to reproduce a sturdy stock.

In the *Lancet*, Sept. 4, 1915, the question is treated editorially from another and more optimistic point of view. It is generally held that the experiences of war as now waged, the strain exerted on the nervous system of continual shell concussions while one is cooped up in a trench, must have the effect of bringing about grave psychological disturbances not infrequently terminating in insanity and neuroses. But the question may be asked, is such really the case? And does war leave behind it enormous wreckage in the guise of nervous and mental sufferers, more or less permanently incapacitated and uninfluenced by treatment?

The writer in the *Lancet* states that facts do not support this point of view and bases his contention upon the recently published Eighty-fifth Annual Report of the Belfast District Lunatic Asylum in which the superintendent, Dr. Graham, refers to the remarkable decrease in the number of admissions for the year as compared with the twelve months preceding. He declares that in such a time of upheaval as the present it is natural to suppose that mental suffering ending in brain collapse should be the order of the day, whereas the figures do not bear out the suggestion. He further holds that "it is not the great tragedies of life that sap the forces of the brain and wreck the psychic organism. On the contrary, it is the small worries, the deadly monotony of a narrow and circumscribed existence, the dull drab of a life without joy and barren of achievement,

the self-centered anemic consciousness; it is these experiences that weaken and diminish personality and so leave it a prey to inherited predispositions, or to the slings and arrows of outrageous fortune."—*Medical Record*.

CEREBROSPINAL SYPHILIS TREATED WITH SALVARSANIZED SERUM.—In the *Journal of the Missouri State Medical Association* for June, 1915, Bartels reaches these conclusions:

1. The early diagnosis and energetic treatment of syphilis properly controlled by serum reaction would do much to prevent the subsequent development of nerve syphilis.
2. We must always remember to be thorough in treating syphilis to eliminate the possibility of a residual focus which very often will involve the central nervous system.
3. If the cerebrospinal fluid acts the part of lymph to the central nervous system and carries nutrition, it should also be able to carry medicinal substances to the cells of the brain and cord. This then would agree with the view of Swift and Ellis on the direct continuity of the subarachnoid space with the lymph channels and lymph spaces.
4. Diseases of the central nervous system due to syphilitic tumor growths and tabes in its incipiency are as a rule benefited by treatment, but in advanced tabes where the degenerative processes have taken place, the very best to be expected is a retardation of the disease.
5. The intraspinal use of salvarsanized serum is an advance in the therapy of syphilis of the central nervous system, as it furnishes the one avenue of approach for spirillicidal drugs to the heretofore inaccessible spirochetes.
6. The intraspinal injection of salvarsanized serum is a safe operation in the hands of properly trained and equipped men.

A BENZIDIN TABLET TEST FOR OCCULT BLOOD.—Roberts in the *Journal of the American Medical Association* of July 17, 1915, points out that it is essential that any test for occult blood shall be accurate, and it is important that it be simple in its technique. The benzidin test, in various modifications, has largely displaced tests previously used, and because of its accuracy and the comparative simplicity of the technique, occult blood testing has come into more general use. It has, however, not been found feasible to make up stock solutions of a benzidin in acetic acid that would keep long, and hydrogen peroxide, because of its instability, has led to frequent errors.

During the past year, after considerable experimenting, the writer has worked out an extremely satisfactory benzidin tablet, and in both private and hospital work he has come to use it to the exclusion of other tests.

This tablet triturate is composed of 1 part benzidin to 20 parts sodium perborate triturated with great care and made up into a 5-grain tablet. The tablet is moderately friable and is best dispensed in small tubes. The specimen to be tested, either a weak emulsion of the stool or the stomach contents or urine, is placed either in a small saucer, pus basin, or porcelain dish in sufficient quantity to wet the tablet thoroughly, but not to entirely immerse it. A drop or two of glacial acetic acid on the tab-

let if blood be present gives rise to a more or less immediate change in the tablet to a greenish blue. Experience with its use gives a fairly accurate idea of the amount of occult blood present, depending on the extent and quickness of the color change. If the amount of blood is small, only the edge of the tablet may turn. The delicacy of the test is slightly less than the benzidin-acetic acid-peroxide test, but has been found amply delicate for practical purposes. There is some danger in too delicate a test, and this has been purposely avoided. Such is the simplicity of this tablet test for occult blood that a nurse or intelligent patient may watch the appearance or disappearance of occult blood without laboratory apparatus of any kind, with merely a small dish, the handle of a spoon to make a thin emulsion, a tablet, and a small vial of acetic acid.—*Therapeutic Gazette*.

DIAGNOSTIC THESES IN PULMONARY TUBERCULOSIS.—BROWN gives these diagnostic points, which have direct bearing on questions of treatment:

1. An appearance of ruddy health does not exclude tuberculosis.
2. In any patient with constitutional symptoms, no matter of what he complains, the possibility of tuberculosis must be kept constantly in mind.
3. Prolonged and intimate exposure at any time of life, but especially in childhood, and in home or workshop or office, is vastly more important in diagnosis than "unassociated" or "non-contact" heredity.
4. Prolonged contact with tuberculosis may lead to infection, but debilitating conditions are necessary usually to cause this to develop into clinical tuberculosis.
5. Constitutional or general symptoms lead us to a diagnosis of tuberculosis, while the localizing symptoms point out the organs involved.
6. The history or presence of certain complications, as fistula in ano, pleurisy, dry or especially with effusion, adenitis, a discharging ear, coming on painlessly, are all strongly suggestive of tuberculosis.
7. Loss of color; prolonged exposure to tuberculous infection, especially in childhood, with a history of swollen glands at that time, the more recent subjection to debilitating conditions, the presence of unequivocal constitutional and localizing symptoms, with or without the aforementioned complications, demand a diagnosis of pulmonary tuberculosis even though no abnormal physical signs are present in the lungs.
8. Your patients, your friends, your family, are as prone to contract and develop pulmonary tuberculosis as hundreds of others.
9. The importance of physical examination in the diagnosis of pulmonary tuberculosis has been overemphasized.
10. Symptoms are a better and more accurate guide to activity than physical signs.
11. Symptoms without physical signs demand treatment, while physical signs without symptoms require only careful watching.
12. Slight but persistent rise in temperature and increase in rapidity of pulse are often present early in the disease.
13. The usual weight of a patient who develops pulmonary tuberculosis is often ten pounds below the normal weight for his height and age.
14. Failure to interpret rightly the significance of symptoms, to detect

the presence of abnormal physical signs, can be condoned; but failure to ask for and examine the sputum repeatedly in any patient with chronic cough is inexcusable.

15. Absence of tubercle bacilli in the sputum means only that bronchial ulceration has not occurred.

16. Auscultation and inspection are the most important procedures in the detection of abnormal physical signs.

17. Inspection reveals localized retraction of the chest wall and limitations of the chest movement.

18. Auscultation is more important than inspection, and the detection of rales by the auscultation of the inspiration following cough is the most important procedure in the detection of physical signs of early pulmonary tuberculosis.

19. Changes in the relative lengths and intensity of the inspiration and expiration are valuable but less easy to detect.

20. The disease is practically always more extensive than the physical signs indicate.

21. Abnormal physical signs in one apex should be considered as due to pulmonary tuberculosis until proved not to be, while those at the base should be looked on as non-tuberculous until definitely proved so.

22. The fluoroscope, the roentgenogram, and stereoscopic plates may reveal and locate pathologic pulmonary changes to be detected by no other means.

23. When sputum is lacking, or when tubercle bacilli are absent on repeated examinations, the possibility of the presence of bronchiectasis, hyperthyroidism, syphilis, and influenza, and more rarely pulmonary tumor and Hodgkin's disease, should be borne in mind.

24. No modification of the tuberculin tests as yet devised differentiates clearly clinical tuberculosis that demands vigorous treatment from non-clinical tuberculosis that requires only a God-fearing life.

25. It may be impossible to determine definitely the presence or absence of clinical tuberculosis.—*Jour. A. M. A.*, June 12, 1915.

INTRAVENOUS INJECTION OF DIPHTHERIA ANTITOXIN.—Ideal for the treatment of diphtheria, according to Seidel, is the following combination: earliest possible injection of antitoxin, large dose, and intravenous route—not alone but in association with the usual intramuscular injections. If treatment is instituted within the first three days the prognosis is good, varying with the duration; but after the third day all is reversed and any selection due to the treatment is abolished. At a recent meeting of the Medical Section of the Scientifico-Medical Society of Jena (*Munchener medizinische Wochenschrift*, June 29) Seidel saw in a given material 100 per cent. recoveries in cases injected before the third day and 100 per cent. mortality in all injected after this period. In one case he saw complete defervescence follow at once upon an intravenous injection of serum. In the discussion of his paper Reichmann stated that with the use of the intravenous route he had not lost a case of diphtheria in nine months. The relative merits of high and deep tracheotomy were discussed, but intubation was not even mentioned. It will some day be re-discovered in

Germany and will then become the accepted method of treatment of laryngeal stenosis in that country.—*Medical Record*.

THE LIMITATIONS OF SALVARSAN IN SYPHILIS.—G. Inouye and S. Hamanishi report their experience in the treatment of 1,780 cases of syphilis during the past five years. They find that whereas the conjoint use of salvarsan and mercury in early cases of syphilis was satisfactory, nevertheless 30 per cent. of these were incompletely cured or show a recurrence. In the early cases treated only with salvarsan intravenously there were 70 per cent. of recurrences and incomplete cures. In early cases treated with the subcutaneous injection of only 0.6 gram of salvarsan the results for the following three years were far better than with intravenous injection; but in advanced syphilis the results were just the reverse, recurrences taking place more frequently with subcutaneous than with intravenous injection.—*Seri-i-Kwai Medical Journal*.

POLLINOSIS (HAY-FEVER): A CONSIDERATION OF ITS TREATMENT BY ACTIVE IMMUNIZATION.—Oppenheimer and Gottlieb (*New York State Journal of Medicine*, June, 1915) define hay-fever or pollinosis as a disease which manifests itself in the spring, from the latter part of May or the early part of June, until the middle or end of July; and in the autumn from the middle of August to the end of September or early October. It is characterized by itching of the eyes and lacrimation, itching of the palate and face, sneezing, serous discharge from the nose, obstructed breathing, and, if the attack is very severe, sooner or later coughing and difficult breathing accompanied by wheezing.

It is caused by the action of pollen grains from flowering plants. The pollen is carried by air currents and inspired with the air breathed; if the recipient is susceptible to the particular pollen, an attack of pollinosis promptly ensues.

Dunbar examined the pollen of 30 varieties of graminaceæ and cyperaceæ and found them active, as also swamp-pink, lily-of-the-valley, hairy Solomon's seal, rape, and spinach. It was found that ragweed, goldenrod, asters, and chrysanthemums cause symptoms when applied to the mucous membranes of susceptible individuals, while normal controls did not react. It was also demonstrated that a patient may be susceptible to one or more pollens, and Koessler has made out a long list of plants having pollen which cause hay-fever symptoms. In this list are found the common oat, the fescue, the barley, timothy, Kentucky blue grass, rye, and wheat. As predisposing factors may be mentioned nasal and pharyngeal pathological conditions and heredity. Among the nasal and pharyngeal conditions obstruction takes a prominent place, such for instance as enlarged turbinate bodies, adenoids, spurs, also diseased conditions of the membranes, such as atrophic and hypertrophic rhinitis, and suppurative accessory sinus disease. There seems to be a particular permeability of the skin and mucous membrane transmitted from the patient who has suffered or is suffering with this or some allied ailment to his or her offspring. More males are affected than females. The condition is not fatal nor are there any autopsy records.

The condition must be regarded as being due to a sensitization of the

individual by the pollen contents through the respiratory tract. There must, however, be at the time of sensitization an abrasion of the mucous membrane so as to make this absorption possible.

Given a patient who periodically each spring or summer becomes ill with hay fever, and if these symptoms begin and end approximately the same time each year, it can safely be said that the patient is suffering with pollen disease. The question is, which pollen is operative in a given case? To answer this query it is necessary to test the patient with the pollen of all the flowers which bloom during the time of the attack.

There are three methods by which it is possible to know which pollen is operative in a given case. A drop of weak extract of a given pollen may be instilled into the lower conjunctival sac of the eye. The one which produces congestion and swelling of the caruncle and mucous membrane of the lid is the one to which the patient is sensitive. A very minute quantity of the extract may be injected intracutaneously, and the pollen to which that patient is anaphylactic will cause swelling and redness around the spot where the pollen extract is deposited. A very minute quantity of pure pollen may be gently rubbed into a small scarification wound of the skin and a wheal will develop at and around this point of scarification if the patient is susceptible to that pollen. Some patients are sensitive to more than one pollen, and it seems that there may be in some cases a general susceptibility to all pollen, so that when the reactions are marked it is possible to conclude that this is the specific pollen which is causative of hay-fever in a given case.

Many patients become progressively worse each season, while with others the symptoms are milder after each attack.

While the patients are suffering with the attack it is possible to give them relief with drugs, particularly cocaine and adrenalin. Weak solutions of these may be instilled into the eyes and applied to the nose. In this way the itching of the eyes and obstructed breathing are mitigated.

Patients suffering with this disease may dwell in localities where the causative pollen-bearing flowers do not grow, such as Fire Island, Green Mountains, White Mountains, and the higher altitudes of the Adirondack Mountains. A pilgrimage to these places must be made each year, and they must remain away the entire six weeks to avoid the disease.

According to Rosenau, Anderson, Otto, and others, if on the seventh, eighth, or ninth day after the first injection a massive dose of antigen is injected into the animal, the symptoms of anaphylaxis do not occur on exhibiting a dose of antigen on the twelfth day. The refractory condition so produced is called anti-anaphylaxis. This same animal will, twenty or thirty days later, become slightly sensitive to the antigen, the symptoms being mild, fatal reactions rarely occurring.

It should be possible to treat patients suffering with pollinosis by one of four methods:

By injecting a dose of pollen extract just before the "hay-fever" time and repeating the procedure in twenty to thirty days.

By injecting a large quantity of immune serum during the attack. From a patient about two ounces of blood were taken; after the proper precaution of a Wassermann reaction, eight cubic centimeters of the serum was injected subcutaneously into a patient of thirteen years suffering at the

time with a violent attack of pollinosis. Within thirty-six hours this little patient had no symptoms of "pollinosis," and no signs of the disease returned during the entire season.

By injecting very small amounts of pollen extract at intervals of ten days or less, so that only minute quantities of anaphylatoxin be formed and the patient's tolerance raised.

By injecting very small doses of anaphylatoxin made *in vitro* to produce the same results as in method number three.

By repeated injections of pollen into horses and rabbits, Dunbar and his associates were able to produce an immunity in these animals, as tested by the complement fixation reaction, especially in rabbits whose serum in some cases would fix complement in dilutions of 1:50,000. Dunbar has transferred passive immunity to individuals by injecting the serum of these animals.

From these experiments has been evolved pollantin, a horse-serum antitoxin, which in itself can produce the condition of anaphylaxis by repeated use and can thus interfere with the cure that it is supposed to accomplish. This product has been a failure, notwithstanding that the German Hay Fever Association has reported 59 to 69 per cent. of successful results with it.

Noon and Freeman, in 1911, published the results of their work on the active immunization of pollinosis by injecting gradually increasing doses of timothy-grass pollen extract. They reported eighteen cases. Excellent results were obtained in three, thirteen were markedly improved, while two cases were not benefited.

In a preliminary report Clowes in 1913 gave his results in the treatment of eight cases of pollinosis. All of the cases were satisfactorily influenced.

Koessley between 1910 and 1914 treated forty-one cases, of which four were cured, 29 markedly improved, and eight were not benefited.

The technique followed during 1913 and 1914 has given an effective antigen for curative purposes.

The pollen was ground up for several days with sand and a sufficient amount of 5-per-cent. sodium chloride solution with $\frac{1}{2}$ per cent. carbolic acid added to prevent the growth of micro-organisms. This mixture was placed in the thermostat for seventy-two hours at 37° C. and then filtered by suction. None of these extracts by this method gave the biuret reaction and few gave a positive ninhydrin reaction. The filtered extract was then precipitated with eight parts of absolute alcohol and filtered quickly in a Buchner funnel to avoid any denaturation, if possible, of the active principle by so strong a concentration of alcohol. The precipitate was dried and weighed. This precipitate on testing has never given a biuret or ninhydrin reaction. It is partly soluble in 0.85-per-cent. sodium chloride solution and physiologically active in very weak solutions.

A total nitrogen content of one of the extracts of ragweed was performed, and it showed 0.066 per cent. of nitrogen. This same solution, on December 20, 1913, gave a positive ninhydrin reaction, whereas on March 24, 1914, three months later, the test was doubtful. This shows that pollen extracts in solution deteriorate on standing.

The dried precipitate was dissolved in 0.85-per-cent. sodium chloride solution with 14 per cent. of carbolic acid and serial dilutions made. With these solutions the patients were treated by hypodermic injections.

Eleven cases were treated in 1914, before and during the season for autumnal catarrh. Six cases were treated in advance of the attack. One of these was cured for the season, four had very mild symptoms, and one was not improved. Five cases were treated during the attack. The symptoms of four subsided after receiving from one to four injections, whereas one patient received no benefit. Altogether there were five cures for the season. In four cases there was marked improvement. Of the two cases that were not improved, one had a polypoidal degeneration of the middle turbinate with underlying bone necrosis. The patient has distinct asthmatic attacks every night, and it was impossible to say whether the attacks were due to his pollinosis or to the local nasal condition. The other was a physician who reacted both to ragweed and goldenrod pollen. He received in all 33 injections, alternating the ragweed and the goldenrod extracts. He came very irregularly for treatment. It is possible that at times the treatment was too intensive, and his physical condition was so poor that possibly he could not develop a tolerance.

Nine of their cases reacted to ragweed pollen and two reacted to that of both ragweed and goldenrod. Both of these latter cases received both goldenrod and ragweed antigen hypodermically. One was cured, but the other was not improved. When a patient is sensitive to more than one pollen, individual doses of each extract should be administered, in order to determine when the tolerance is sufficiently raised for each. Mixing the antigen is too empirical.

There are two ways of determining when a patient has become sufficiently immune to warrant discontinuance of the treatment:

With a complement fixation test.

From the size, intensity, and duration of the wheal produced by skin scarification, at different times, namely, before and during the treatment.

The scarification method is the one generally used to diagnose and determine the degree of immunity induced. The wheal produced by the initial vaccination is measured, its time of appearance and its duration noted. After five or six treatments the patient is revaccinated and the wheal is observed again as before, and compared with the former results. When the wheal is very small or does not appear, the patient is sufficiently immune and probably will go through the season with very mild symptoms or none at all.

While the immunity may not be successfully carried over to the succeeding year, recurrences are much milder at least and patients require less reimmunization. An attack the following year can probably be overcome by very few injections.

The best time to begin treatment is probably about ten weeks before the attack may be expected to occur. Regularity of attendance at about weekly intervals is important.

The authors feel that cures were not accomplished in two cases because treatment was begun too early; and in two other cases because the patients were treated too irregularly. Furthermore, it is probable that some of these cases were susceptible to pollen other than that of ragweed

and goldenrod. At the time of their initial work they were not prepared with as large a variety of pollens as they now possess for the continuance of the work along broader lines, which they hope in the future will enable them to bring about a large percentage of cases influenced by their attempts at immunization.—*Therapeutic Gazette*.

INFECTIOUS AFFECTIONS OF THE URINARY ORGANS IN INFANTS.—H. L. Kowitz (Munch. Med. Woch., July, 1914) says that pyelonephritis in the infant is generally diagnosed cystitis, and hence is believed to be of ascending origin. Because of this mistaken diagnosis its occurrence is considered much rarer than it in reality is. The author believes it to be of hematogenous origin, and hence a descending infection, generally caused by the bacillus coli, or by the streptococcus in the blood. Between the middle of August and the end of December, 1913, the author treated seventeen boys and twenty-three girls with this affection. The pyelocystitis is generally preceded by gastrointestinal symptoms for several months. The largest number of cases occurred in July, the smallest in winter, when intestinal troubles are least frequent. Escherich found in pure culture the bacillus coli oftenest; also the paracolon bacillus, and bacillus lactis atrogenes. In children with eczema or furunculosis the author found staphylococci, in three cases there were mixed infections of bacillus coli with saprophytes, with streptococci and staphylococci. At first there was bacteriuria with albuminuria, and later casts and epithelium.—*The American Journal of Obstetrics*.

USE OF LIQUID PARAFFIN IN INFANTS.—H. K. Hill (Arch. Pediat., 1915 Vol. XXXII, p. 96) in a very interesting paper on the use, in infants, of liquid paraffin, officially known as petrolatum liquidum—states that, in the chronic constipation of infants, liquid paraffin in large doses gives the best results we have yet obtained. In severe gastroenteritis and ileocolitis its use was disappointing, possibly because too small doses were given. Combined with Bulgara tablets, liquid paraffin is especially indicated and will give remarkable results in a certain proportion of infants and young children suffering with asthma, some varieties of diabetes, migraine, cyclic vomiting, convulsions, epilepsy, enuresis, some forms of eczema, in the so-called idiopathic edemas, and in many severe teething cases.

PYLORIC HYPERTROPHY.—In a study of "Pyloric Hypertrophy in New Born Infants," by F. L. Wachenheim, M.D., New York, (Amer. Jour. of Dis. of Child., 1915. Vol. 10, p. 87) he showed that the diagnosis between pyloric hypertrophy and presumably normal conditions, is beset with difficulties, and that as a consequence, the distinction between spasm and true organic obstruction is likely to remain in many cases a matter of great uncertainty. He performed atelopsies on four infants, dying from different causes, ranging from five days to three weeks of age. He found that the pylorus formed a thickened mass, its walls being about 4 m.m. in diameter, but with the lumen normal. He examined two cases, 3 and 4 months of age, and found the pylorus normal in one case and a very little thickened in the other. It would seem from these investigations as though the majority of new-born infants had the pyloric thickening.

INFANT FEEDING.—In comparing the simple dilution of "whole milk" in feeding infants and percentage feeding, Epstein (*Medical Record*, May 29, 1915) says that when we compare the food value of the simple milk modifications with the food value the baby would have received from the breast, especially in the earlier months of infancy, we find that the infant is cheated of its food at the threshold of life.

Percentage feeding is scientific and a proper food can be prepared by this method. Humanized milk—that is, cow's milk with the percentage composition of human milk—can be given to most babies from early infancy to the end of the first year.

In order to make it available to the average mother, the author simplifies the method by preparing the food from the upper 15 ounces of a quart bottle of milk. After standing for six hours at a temperature of 40° to 50° the upper 15 ounces of a quart bottle of milk has the following percentage composition: Protein, 3.40; sugar, 4.50; fat, 8.00; salts, .70; water, 83.40. By diluting this with an equal volume of water it has the following percentages: Protein, 1.70; sugar 2.25; fat, 4.00; salts, .35; water, 91.70. By adding sugar enough to make it 7 per cent. you obtain a food very similar to human milk. The mother or nurse has simply to add an equal number of ounces of boiled water to which the proper amount of milk sugar has been added. The entire quantity of food is now equally divided into the number of feedings required and fed at regular hours.

This food is for healthy infants. The feeding of infants during acute illness or of those suffering from chronic digestive disturbances or intolerance for certain elements in the milk, requires individual study to adapt the food to the baby's condition.

CUTANEOUS REGIONAL VARIATION IN THE PIRQUET REACTION.—In the *Arch. Pediat.* Vol. XXXII, p. 92, John A. Colliver, M.D., reports on 50 cases to show how different parts of the body reacted to von Pirquet's test. Cases were used which showed the positive tubercular reaction but which were admitted to the hospital for treatment for some other disease. His conclusions were, that there is no good reason for making the Pirquet tubercular cutaneous test elsewhere than on the forearm, and this location has the advantage of being more convenient.

A CASE OF DESTRUCTION OF CORTICAL VISUAL CENTERS BY A RIFLE BULLET.—The case was that of a soldier, aged thirty-four years, who was shot through the back of the head, five and one-half inches posterior to the outer boundary of the orbital margin on a line one and one-fourth inches horizontally, posterior to the tip of the mastoid process and three inches superior to that point, transversed through the back of the head extending slightly upward and backward. Upon regaining consciousness, after nine days, he was unable to see anything beyond distinguishing light from dark, or coarse hand movements.

The pupillary reactions to light, normal; but rather poor to convergence and accommodation. The fundus showed only slight hyperemia of the papillae. The general condition of the patient excellent. No change

in the eye condition occurred during the subsequent four months.—*Dr. R. Gravich Waddy, Ophthalmoscope.*

CHANGES IN THE BLOOD AND AQUEOUS HUMOR IN METHYL ALCOHOL INHALATION.—The writer considers the general question of wood alcohol poisoning and then goes on to describe the experimental effects on animals after confining them in a box or bell jar containing varying quantities of the vapor of methyl alcohol.

He found that if free ventilation were not maintained, one prolonged exposure always produced loss of consciousness, loss of papillary reflex, slight contraction of the pupils, hypotension of the eyes, coma and death. If free ventilation were maintained, no such marked results took place. Repeated daily inhalations produced a loss of visual acuity and marked reduction in the general vitality. The higher the development of the animal species the more severe were the results produced.—*H. H. Tyson and M. J. Schoenberg. Archives of Ophthal.* WM. SPENCER, M.D.

PRECOCIOUS MATURITY IN GIRLS.—F. Beekman (*Arch Pediat.*, 1915, xxxii, 4) records a case of precocious maturity in a girl six and half years of age. Nothing abnormal was noticed until she was about four years of age, when she commenced to have peculiar laughing spells, which at times lasted as long as an hour. Soon after this it was noticed that her breasts were becoming prominent and she commenced to bleed from her vagina periodically. Her mental development was about that of girls of her age, though her bodily development was that of a young woman of sixteen. Radiograms of the elbow-joint showed ossification resembling a development of at least sixteen or seventeen years of age. Reviewing the literature, Beekman says that the symptoms of precocious maturity in the female are the early onset of the changes due to puberty. The changes manifested are both anatomical and functional, but the mental development does not keep pace with the somatic. Abnormal development in children associated with tumors ("hypernephromas") springing from the cortex of the adrenal gland cannot be considered as true cases of precocious maturity. Precocious maturity is due to conditions affecting the internal secretion of certain of the ductless glands. It is probably caused by the premature activity of the interstitial cells of the ovaries, which activity is produced either by some intrinsic factor or by the effect of a hormone from the hypophysis cerebri, pineal gland or possibly thyroid.—*American Journal of Obstetrics Diseases of Women and Children*, July, 1915.

A CASE OF OVARIAN PREGNANCY.—Seedorff (Copenhagen) records a well studied case of ovarian ectopic pregnancy which ruptured. He says we must assume that the ovum was imperfectly liberated from the follicle, and being retained within a fold of the follicle and there impregnated. This assumption is suggested by the superficial location of the entirely intact corpus luteum. If the ovum had been impregnated while in the follicle and had developed there we would expect to find more or less defect in the lutein body and perhaps a layer of lutein cells about the ovum. But the growing ovum has only destroyed the upper layer of lutein cells. No pronounced decidual formation was found, but only a decidual reaction among the surrounding tissues.—*Monatschr. f. Geb. u. Gyn.* Vol. 42-30.

THEODORE J. GRAMM, M.D.

LACTIC ACID DOUCHES FOR PREVENTING PUERPERAL INFECTION.—Haler and Zuckermann (Vienna) have again opened up the subject of lactic acid douches in pathological vaginal secretion and especially for the purpose of preventing puerperal infection. They refer to the well-known facts concerning the differences between the secretion in the vagina and that about the vulva, and call attention to recent studies which have shown that gonococcus infection has a tendency to ascend and produces its well known interference with the puerperium. If this is demonstrable of one form of infection they reason and cite authors to prove that the same may occur with other varieties of microorganisms. They refer to the works of Natoig, of Wegelius, and of Zangmeister, with which we are all familiar. But Doederlin's observations and teaching concerning the bacterioid properties of the normal vaginal secretion receive special attention, and Zweifel's proposal to use a 5 pro mille solution of lactic acid is again emphasized. They have made bacteriological and clinical observations which quite confirm those made a number of years ago.—*Monatsschr. f. G. u. G.* Vol. 42-1.

THEODORE J. GRAMM, M.D.

AN ACTIVE SUBSTANCE IN THE INTERNAL SECRETION OF THE OVARY AND OF THE PLACENTA.—In an article on internal secretions, Hermann (Vienna) has reviewed many of the observations contributing to our present knowledge of this difficult subject. He succeeded by means of elaborate procedures in the chemical laboratory in isolating a substance which appears to be the active principle or essential agent in producing the systemic effects usually referred to the internal secretion of the ovary. The active agent in the placenta is believed to be similar in character. It is a yellow, slightly iridescent oil, becoming semisolid from cold, but otherwise fluid. It has distinct cholesterine reaction. In the air it becomes brownish from oxidation, and is composed of carbon, hydrogen and oxygen. It is evidently a cholesterine derivative, soluble in alcohol, ether, acetone and benzole, and insoluble in water. Having isolated this substance so that extraneous effects would be excluded, Herrmann made from one to five injections into rabbits and was rewarded with prompt and obvious results. These consisted in pronounced developmental influences upon the entire genital system, vulva, vagina, uterus, tubes and ovaries, and upon the mammary glands, both in female and in male animals, so that within a few days an infantile, undeveloped animal displayed full development in the organs named.

From the investigations thus briefly outlined the author believes we are warranted in concluding that the active substance exists in the corpus luteum and in the placenta, and function is to conserve the anatomical integrity of the genital apparatus and of the mammary glands on the one hand, and the physiological development (rutting, pregnancy) on the other. The hormonal dependence of the mammary glands upon the corpus luteum and placenta have also been shown. The numerous illustrations add materially to the value of this notable study.—*Monatsschr. f. G. u. G.* Vol. 41-1.

THEODORE J. GRAMM, M.D.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

KALI BICHROMICUM.—A laboratory of materia medica has recently been established in connection with the College of Homœopathic Medicine of Ohio State University. This year a special investigation was made with kali bichromicum upon experiment animals to verify previous work, and, if possible to add something new to that drug's distinctive pathogenesis. Among these non-human provers rabbits seemed most suitable for the trials, and these animals reacted best to the drug both functionally and pathologically.

Dr. A. E. Hinsdale directed the investigation and the experiment was begun by administering 40 mgs. of potassium bichromate per os twice daily, with a gradually increasing dosage until 400 mgs. twice daily were reached in a period averaging 31 days, at which time the animals died as a result of chronic poisoning.

A brief resume is the following of those objective symptoms which the drug produced while the experiment was in progress. (1) A marked sluggishness in movement was noted in all of the rabbits. This began about the seventh day and lasted until the experiment was completed. Coincident with this symptom of sluggishness, there was observed a marked lack of appetite which lasted until their death. (2) The nasal discharge was characteristic and comports well with our previous knowledge. It was stringy, tenacious, muco-purulent and non-purulent. The chemical and microscopical examination revealed simply mucus and a few non-pathogenic bacteria. (3) A yellowish-red diarrhea made its appearance. This was towards the end of the experiment. It signified an extension of the inflammation as far as the gut.

No rise in temperature was found in any case, thus supporting the view of Timothy F. Allen who stated that fever was never an accompaniment of the state of patient forcing the use of this salt of potassium. Blood examination again confirmed Allen. Periodical counts showed an anemia, in two cases as low as 2,500,000; also a marked leucocytosis. An interesting feature of the work of Dr. Hinsdale was the thorough post-ing of the rabbits. It was found from this work that those organs principally affected were the stomach, kidney, heart and liver. From this pathological perspective, abnormal findings point to the sphere of the drug's use at the bedside.

(1) Conditions of generalized weakness.

(2) Catarrhal states of the nose and stomach, characterized by tough and stringy mucous.

- (3) Those forms of enteritis, characterized for the most part, by a yellowish-red diarrhea.
- (4) Absence of fever.
- (5) Anemia, with a lowered opsonic blood index, when caused by improper elimination and digestive disturbances.
- (6) Ulcerative conditions of the nose and stomach.
- (7) Dilatation of the stomach.
- (8) Cases of gastritis from constant and prolonged irritation.
- (9) Incipient or moderately advanced parenchymatous nephritis.
- (10) Dilatation of the heart, especially that form resulting from co-existing kidney lesions.
- (11) Pathological conditions of the liver showing fatty infiltration and an increase in soft fibrous tissue.

AN UNWITTING PROVING OF PLUMBUM CARBONICUM.—Dr. L. R. Sante has reported, in the *Journal of the American Medical Association*, two cases of plumbism due to an unusual cause—the use of a cosmetic. A single woman, aged 21 years, was admitted into hospital with the history that she had been in perfect health until four years ago, when she was seized with abdominal pains while at business, and for three weeks she was confined to bed with griping pains, followed by cramps in the legs. She returned to work, but a week later had a similar attack. She became jaundiced, with pain localized in the right hypochondriac region, and was sent to hospital for operation, which she declined at the last moment. No gall-stones were ever passed. From this time she had periods of illness and operations were proposed for gall-stones, appendicitis, and exploration of the abdomen. A year after the first attack she noticed pain and tingling in the extremities and loss of power in the hands and wrists. She grew worse with succeeding attacks until the fingers were so retracted into the palms as to render extension impossible. She finally could not walk. On examination she was poorly nourished and very anemic and the extremities were very tender. There was a marked “blue line” over three teeth. The muscles of the upper limbs, especially in the forearms and hands, were markedly atrophied. Extension of the wrists was impossible and the reaction of degeneration was present. There was considerable atrophy of the muscles of the thighs, but the knee- and ankle-jerks were present. Peripheral neuritis from lead was diagnosed and the patient was questioned as to possible sources. She finally admitted that she had used “flake-white” as a face powder. It was mixed with glycerine and applied so as to make a smooth velvety covering. The anemia was so profound that the red corpuscles were reduced to 2,750,000, and stippled cells were present. The urine contained a little albumin and casts. She ceased to use the powder, and after seven days all the stippled cells had disappeared from the blood. In six months she gained 30 pounds, the red corpuscles rose to 4,000,000, and the wrist-drop disappeared. In the second case the patient was a woman, aged 50 years, who had used “flake-white” for 10 years. For three years she had numerous attacks of abdominal pain with cramps in the muscles, and at times was jaundiced. She was operated on for gall-stones, and several were removed, but there was no decided improvement, and the attacks of colicky pain continued.

Eleven months later the nerve trunks of the limbs were very tender, and she had lost power in the forearms and hands. On examination she was confined to bed, ill-nourished, very anemic, and slightly jaundiced. A "blue line" was present on both the upper and lower gums. There was extreme atrophy of the muscles of the forearms with wrist-drop. The lower limbs were atrophied, but the knee- and ankle-jerks were present. The face powder was discontinued, and in seven months nearly 100 pounds were gained in weight, the anemia diminished, and the wrist-drop disappeared. "Flake-white" is carbonate of lead. Dr. Sante points out the frequency with which toxic effects due to this face powder must be overlooked. "Out of the thousands of girls who use it" (to use the words of one of the patients), there must be many on whom it has untoward effects which do not amount to characteristic plumbism. No doubt many obscure conditions for which no cause can be found are thus produced. In the first case 17 different diagnoses had been made and laparotomy proposed four times.

VON BEHRING ON HAHNEMANN.—In the following interesting passage, von Behring sets forth the claims of homœopathy and the new therapy (tuberculin is meant) in a manner that leaves nothing to be desired:

"The scientific principles of this new tuberculo-therapy are yet to be established, just as the scientific principles of my anti-toxic serum therapy remain to be explained, notwithstanding the assertion by many authors that therapeutic action of my diphtheria and tetanus antitoxins is clearly understood since the promulgation of Ehrlich's side-chain theory. For speculative minds the new curative substance will undoubtedly become a most interesting object of scientific investigation, but I do not believe that medicine will profit much by it. In spite of all scientific speculations and experiments regarding small-pox vaccination, Jenner's discovery remained an erratic block in medicine, till the biochemically thinking Pasteur, devoid of all medical classroom knowledge, traced the origin in this therapeutic block to a principle which cannot better be characterized than by Hahnemann's word—homœopathic.

"Indeed, what else causes the epidemiological immunity in sheep, vaccinated against anthrax, than the influence previously exerted by a virus, similar in character to that of the fatal anthrax virus? And by what technical term could we more appropriately speak of this influence, exerted by a similar virus, than by Hahnemann's word—homœopathy?

"I am touching here upon a subject anathematised till very recently by medical pedantry; but if I am to present these problems in historical illumination, dogmatic imprecations must not deter me. They must no more deter me now than they did thirteen years ago, when I demonstrated before the Berlin Physiological Society the immunizing action of my tetanus antitoxin in infinitesimal dilution. On this occasion I also spoke of the production of the serum by treating animals with a poison which acted the better the more it was diluted, and a clinician, who is still living, remonstrated with me, saying that such a remark ought not to be made, since it was grist for the mill of homœopathy. I remember vividly how Dubois-Reymond, who during the progress of the demonstrations and discussions had become drowsy, suddenly sat up all attention when I replied in about these words:

"Gentlemen, if I had set myself the task of rendering an incurable disease curable by artificial means, and should find that only the road of homœopathy led to my goal, I assure you dogmatic considerations would never deter me from taking that road."

In the later days of Hahnemann's career, a famous letter has been preserved. It bears upon the question at issue—"les plus inestimables trésors sont une conscience irréprochable et une bonne santé; l'amour de Dieu et l'étude de soi-même donne l'une, l'homœopathie donne l'autre."

HYPERCHLORHYDRIA.—*Anacardium*.—Faint feeling one or two hours after eating; sour eructations; all symptoms relieved by eating; violent gastralgia and urging to stool which passes off on going to stool.

Argentum Nitricum.—Symptoms of acute pyrosis, fluttering of the heart and a condition closely simulating angina pectoris. This salt of silver in the dynamized state is of incalculable value in cases of true angina pectoris. Gastralgia with radiating pains to the precordial area and breathing which has become labored and asthmatic in type.

Bryonia.—Food distresses patient as soon as he takes it; it lies in the stomach like a hard load.

Kreosotum.—One of the most valuable of all remedies for disposition to vomit, with foul breath, odontalgia, nausea, and enfeeblement of the digestive function. Of great utility in cholera infantum in the summer months.

Natrum Muriaticum.—Violent thirst, waterbrash and an aphthous condition of the buccal cavity in evidence when this remedy cures. There is a periodical febrile condition apparent and a feeling of great chilliness. There is present a feeling of weakness and sinking in the stomach.

Pulsatilla.—White coated tongue; dry mouth and no thirst; there is a sensation of fullness after eating and stomach feels as if ulcerated; distress comes on about two hours after eating, also shifting flatulence. This remedy is more strongly indicated if these symptoms are brought on by eating cakes, fats, rich and greasy foods.

THE VALUE OF ALFALFA.—One of the most interesting papers of an original kind and one which caused a good deal of comment in the press was one read by Dr. A. L. Blackwood at the recent meeting of the American Institute at Chicago. Dr Blackwood spoke of the great utility of the alfalfa, not only as a tremendously important drug in states of intestinal catarrh and loss of bodily vigor but as a useful remedy in certain forms of kidney disease, as it proved a great diuretic, of a peculiar kind. One thing noted was its pronounced influence on appetite. Ten drops of the tincture thrice daily will most certainly induce great craving for food, even between meals. This was noted not only on human beings but upon experiment animals—guinea pigs being used in the tests of the doctor. On account of the large quantity of mineral salts in its composition it proves a valuable drug in states of falling away and de-mineralization of the body in general. The plant belongs to the clover alliance and is one of the leguminosae. Dr. Blackwood's work which is of high order should be corroborated by subsequent work along the same line. In guinea pigs the action on stool was singular; it seemed to change its character and cause the hard little lumps to become soft, mushy ones.

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NOVEMBER, 1915

AN ADDRESS ON HOMŒOPATHY.

BY

AUGUSTUS KORNDORFER, M.D., PHILADELPHIA.

DELIVERED AT THE OPENING SESSION OF THE HAHNEMANN
MEDICAL COLLEGE.

GENTLEMEN :

It affords me pleasure to greet you this evening and bid you welcome to the halls of the Hahnemann Medical College of Philadelphia; and further, to express to you the earnest wish that you may here acquire such a comprehensive knowledge of medicine, as will make you worthy to receive, not only the degree of doctor of medicine, but will also thoroughly prepare you for the special degree of doctor of homœopathic medicine conferred by this college. With such knowledge you surely will become faithful practitioners and ardent exponents of that most beneficent system of medicine for which this college has been established.

At the request of the faculty I shall speak to you upon the subject of Homœopathy. I shall consider it broadly from the three-fold standpoint of: its past, its present, and its future. A past, replete in memories; a present, instinct with progress; a future, full of inspiration and brilliant opportunity.

A hasty glance at the status of the art of medicine during the latter years of the eighteenth century, will prove sufficient to demonstrate the inadequacy of the then employed methods. Indeed, at that time medicine consisted largely of conjecture, theoretical fancies, hypothetical surmises and

superstition, rather than of well devised methods based upon carefully determined facts.

Bigotry and intolerance, twin children of ignorance and superstition held control. Science had not yet gained foothold. True, some venturesome spirits had attempted excursions into the domain of pure experiment, but soon halted in their efforts, having failed to grasp an intelligent conception of the possibilities within their reach; or, sorely discouraged at the difficulties encountered, abandoned their search.

Then came a time of actual awakening; a spirit of real investigation and research. Old things were passing away, new truths were being revealed; still tradition impeded progress. Soon, however, that power of critical analysis which had been so efficient in developing the sister sciences, began to have its influence upon the profession. Tradition lost its control; the light of logical reasoning shed upon the revelations of pure experience made possible a beneficent revolution in medicine: and Hahnemann's work began. A work that steadily has gained strength and compass with the increasing developments of scientific research.

As memory carries me back to the early days of our school, the forms and faces of those pioneers of homœopathy in America: Hering, Jeanes, Detwiler, Guernsey, Lippe, Williamson and a host of like enthusiastic disciples of Hahnemann rise before me, and as they worthily entered upon their reward, we see our Raue, Thomas, Farrington, McClatchey, Dudley, James, Betts, each of whom has received the plaudit "well done," and these again followed by a younger generation of earnest workers, who though taken in their prime, had shown that with increasing experience their faith in the law became ever more firm. May we through the faith which they exemplified in their life and work, find inspiration for soul devotion and living service in the cause of Homœopathy.

On the night of the tenth of April (a little after midnight), 1755, was born at Meissen, one who was destined to revolutionize medicine: Samuel Hahnemann.

I shall not attempt an extended biographical sketch of this illustrious savant. It will be sufficient for our purpose to say that his teachers saw in him such exceptional intellectual power that they urgently favored his longing desire to pursue his studies: and, that despite his limited financial means he was enabled to continue his university course. At the age of twenty-

two he not only had attained an enviable standard in his collegiate work, but had manifested an unusual facility in the mastery of languages, both ancient and modern. This proficiency proved of the greatest importance in his subsequent researches in the field of medicine, opening to his use the medical literature of all ages and of all people.

Hahnemann received his medical degree on the tenth of August, 1779, and entered upon his practice with bright prospects and happy anticipations; but the results, from the curative standpoint, fell far short of the promise.

The uncertainties pertaining to the scope and power of drug action, coupled with the consequent unsatisfactory results of treatment, led him, after several years, to abandon the active practice of his profession and devote himself to scientific research and to the task of translating scientific and medical works. Thus we find the early disappointments which he experienced leading him to the only avenue through which he could reach a knowledge of the most logical and scientific method of investigation and research that could be applied to the study and development of medicine. How often in life's work do we find just such early failure incite to efforts which lead the way to far-reaching success.

In 1790, while translating Cullen's *Materia Medica*, Hahnemann noted the fever producing properties of the cinchona bark, catching his first glimpse of the law of similars. In 1796, having wrought out the problem and reached definite conclusions, he published the result in that remarkable "Essay on a New Principle for Ascertaining the Curative Powers of Drugs."

This publication aroused much criticism and ultimately led through additional essays to bitter disputations, which brought upon him the enmity of the profession. Physicians and apothecaries arrayed themselves against his views and sought every opportunity to destroy his influence in the profession and among the laity. No intrigue was too ignoble, no assertion too perfidious, no act too contemptible for their despicable intolerance. His character was most wantonly and maliciously assailed and his practice was temporarily destroyed, through the enactment of most unjust laws: measures which speedily reduced him to poverty, but failed utterly to break his iron will or weaken his contention against the prevailing erroneous theories of disease and methods of medical practice.

In 1811, he removed to Leipzig and announced his intention of lecturing upon the theory and practice of Homœopathy. In 1812, he qualified, in accordance with university usage, for a lectureship in medicine, presenting as his thesis, his celebrated dissertation upon the helleborism of the ancients, "*Dissertatio historico medica de Helleborismo Veterum.*" This thesis he defended June 26th, 1812, at which time the Dean of the Faculty, strongly impressed by the wonderful erudition displayed, freely expressed his admiration of Hahnemann's learning and genius. As a result Hahnemann was accorded the privilege of the University, and soon opened his course of instruction with two lectures each week.

For several years he taught and practiced without serious molestation, when again his successes aroused the jealousy of the physicians and apothecaries, who finally secured the enactment of an ordinance forbidding him to dispense his own medicines, thus again making practice impossible.

In this extremity, Duke Frederick Ferdinand of Anhalt, a convert to the new method, invited Hahnemann, in 1821, to Coethen, appointing him physician-in-ordinary to his household and bestowing upon him the title of Hofrath. Thus honorable position and undisturbed abode were now guaranteed him despite the most malevolent efforts of an infamously unworthy profession. In this connection it may be interesting to note that in Leipzig, where in 1821 Hahnemann was ostracised, there was erected in 1852, a statue to the honor of his name and in commemoration of the beneficent work that he had wrought.

While it would be interesting to review, as a matter of history, the medical fancies and fallacies to which I have alluded, it will be more profitable this evening, to briefly consider a few leading facts illustrative of Hahnemann's work in the development of a firm basis for scientific medical investigation and research. With this end in view we may consider :

First. Hahnemann's inauguration of the systematic study of drug action and his development of a sure foundation for a pure *materia medica*: one based upon the systematic proving of drugs upon the healthy human body, over against the method of animal experimentation and theoretic conjecture theretofore in vogue. To-day every teacher of note in the field of *materia medica*, recognizes the fact that experiments upon

healthy human beings form the only reliable basis for the study of the therapeutic sphere of action of any given drug.

Second. Hahnemann analyzed the various modes of drug action against disease, and found that although palliation is attainable through the antipathic and heteropathic methods of drug selection, cure is traceable only to the action of drugs applied under the principle of the opposition of the similars. This fact is being verified daily, even by our opponents, who habitually employ a score or more of our proved remedies upon well known homœopathic indications. Again, within the past two decades giant strides have been made in the successful use of the various nosodes, such as tuberculin, the serums, the so-called vaccines and the phylacogens, each acting in accordance with the principle of similars against the diseased condition from which the specific preparation is derived.

Here let me direct your attention to the violent opposition we met when, nearly a century ago, we introduced the nosodes as therapeutic agents. One writer says: "An offshoot of homœopathy, which demands only the harshest criticism, is isopathy,—perhaps the filthiest theory ever invented." Yet to-day, the allopaths are enthusiastic in their advocacy and use of such nosodes. Permit me to refer you to Hahnemann's comments upon the so-called isopathy, *Organon*, foot note to Section 56, where he says: "Some would fain create a fourth method of employing remedies against disease, through so-called isopathy, which aims to cure a given disease through the use of the miasm upon which it depends. Granting this to be possible, and surely it would deserve to be called a valuable discovery, the cure would nevertheless be accomplished only through the use of a highly potentiated and consequently altered form of the miasm, therefore only by opposing the *similimum* to the *similimo*." This surely is verified in the preparations introduced by Hering, Gross, Burnett and others of our school, and in all those introduced by the allopathic school of to-day.

Third. Hahnemann recommended as a rule of practice, that the largest dose to be administered, should be the smallest dose that will cure. This also is being accepted by the profession, and evidenced in the greatly reduced doses commonly employed, and especially in the infinitesimal doses of the nosodes now recognized as most efficient. In addition to the mere size of the individual dose employed, we must also note the long intervals

between the doses, now recommended, with the expressly declared purpose of avoiding aggravation of existing symptoms,—a condition which experience has proved may result in ultimate failure. The overaction of even a single needless dose of the similar remedy often proving injurious.

Thus we find that the three cardinal points in Hahnemann's teachings: the law of similars, the single remedy, and the minimum dose, have each received recognition from the opponents of homeopathy, and to-day are more firmly entrenched in medical practice than ever before.

When we consider what Hahnemann had to contend against in the then accepted erroneous doctrines of disease, and the equally imperfect and erroneous views of physiology, we contemplate with profound admiration his almost inspired knowledge of nature's plans and his marvelous prescience in the domain of medicine.

Just a few words to elucidate the features last referred to. In 1831, Hahnemann clearly and succinctly presented his views of the cholera miasm as the causative factor in the spread of the disease. He defined the cholera miasm as "an invisible, probably animated and perpetually reproductive contagious matter," and speaks of it as "growing into an enormously increased brood of those exceedingly minute, invisible, living creatures so inimical to human life." The means for the physical demonstration of these facts were not at command; the necessary laboratory methods had not yet been devised, but his prophetic instinct perceived the truth long before art could demonstrate or explain the same. Then, too, before he had seen a case of the disease, his philosophy led him to perceive, under the law, the importance of camphor, cuprum and veratrum as curative agents in the various stages or phases of the then existing epidemic in Russia.

Like every great philosopher Hahnemann had a far greater grasp of the secrets of nature, than power to explain her mysteries.

In the field of chronic diseases Hahnemann was equally fortunate with his views, though until quite recently it was thought impossible to reconcile his psora theory with any modern idea of disease process or physiologic law. Yet even in this field of investigation Hahnemann's conclusions have been remarkably affirmed through the latest revelations of physiology. We now are assured that the symptoms enumerated by Hahnemann as

indicative of psora, are practically identical with those known to be dependent upon the condition known as hypothyroidia, with its accompanying train of disturbances.

Physiologists have demonstrated that the pituitary body contains the activating center of the adrenals and thyroid. It has also been shown that, "increasing the action of the adrenals enhances the bacteriolytic and antitoxic powers of the blood and phagocytes"; and further "that the vulnerability of the organism to infection is inversely proportional to the efficiency of the adrenal system, the relative amount of auto-antitoxin in the pulmonary and intestinal secretions and the bacteriolytic activity of the phagocytes;" and we have every reason to believe that chronic as well as acute diseases "are due to agencies, endogenous or exogenous, which interfere with or paralyze the functions of the test organ and through it the adrenal system."

Analysis of the symptoms of hypothyroidia and comparison with the symptoms recorded by Hahnemann as evidence of the psoric miasm, taken in conjunction with the fact that psoric patients show just such lack of resistance to disease as is evidenced by subjects of hypothyroidia, resolves the possibility of the oneness of the causative factor into a certainty of the fact.

I will not detain you by enumerating the symptoms of hypothyroidia but let it suffice to say, that each symptom has its duplicate in those indicative of psora..

You will hear it said that Hahnemann ignored pathology and belittled all attempts at diagnosis, and further that he overemphasized symptomatology. If, however, you will but consider the then accepted fatally erroneous pathology coupled with the gross ignorance of physiologic laws, you surely will be deeply impressed with the wisdom of his course. In addition, if you thoroughly understand his philosophy you surely will become earnest in your support of his views.

Mackenzie pungently says: "The sister sciences in place of seeking assistance of medicine, look askance at the wild speculations put forth in the name of science and at the loose thinking and play of the imagination which many medical writers deem legitimate in dealing with the phenomena of disease." Many similar thoughts may be culled from recent writers.

What a contrast was Hahnemann's method; his systematic patient and accurate observation preceded and finally led to his discernment of the law. Thus furnishing a brilliant example of

nature's method of revealing her harmonies and methods to man.

The most critical analysis of Hahnemann's work, coupled with the results of a century of crucial criticism, have tended but to amplify and elucidate every major proposition that he presented for the consideration of the profession.

The wonderful results attained by the early disciples of homœopathy were wrought through their thorough grasp of and unswerving faith in, the tenets of our school. Think of the stupendous work of Stapf, Jahr, Bonninghausen and that host of early disciples of homœopathy; their years of faithful toil against such fearful odds; their self-sacrifice, both social and professional, that the truth might triumph; then compare their life and work with the opportunities and the indifference manifest to-day. Dare we boast?

We need more of that pioneer spirit among our young men. Lack of active opposition has engendered a spirit of apathy and indifference, which in science always is to be deprecated. Loyalty to the truth that Hahnemann discovered demands that we should unswervingly maintain it. May we not hope that each of you, thoroughly indoctrinated in the tenets of homœopathy, will become firm in your adherence and zealous in your advocacy of its cause?

Nothing is more despicable than a lukewarm adherent. You need not fear an open enemy, but avoid as you would a venomous serpent, a lukewarm advocate; to trust in such is to lose your cause. Even the Lord has said, "Because thou art lukewarm and neither cold nor hot I will spew thee out of my mouth."

Let me urge upon each of you to so pursue your studies; to so search Hahnemann's writings; to so enthusiastically strive to build up the science of medicine along the lines of those harmonies of nature discovered by Hahnemann and corroborated by numberless observers; that you too may become important factors in keeping our school in the forefront of medical progress. That through a clearer understanding of nature's laws coupled with an intense enthusiasm for the cause, you may faithfully do your part, loyally contending for the supremacy of that system which experience has proved so true.

While I thus urge you to become earnest and enthusiastic students of homœopathy, I would not have you think that I assume that Hahnemann's writings constitute the alpha and the

omega of the medical sciences. In the light of the great advance in all fields of research, such century-old works as Hahnemann's must needs fail to satisfy many an honest searcher after truth. "More has been given and more shall be required," of us, but remember that the truth must ever harmonize in all its parts: and doubt not. Rest assured that every added discovery will but accentuate the revelations of the past.

The lifetime of one man is not sufficient, that he include in his discoveries all that pertains to any one science. It never has been granted any one individual to both invent and bring to perfection any complete system of science. Hahnemann's discoveries were far reaching and required for their development that several subsidiary sciences be much farther advanced; but the triumph of homœopathy is found in the fact that every subsequent discovery applicable to therapeutics, has but strengthened and confirmed its tenets.

The demand for present-day evidence is imperative, and we must not evade our responsibility. We must, in our laboratories, search for new methods of investigation, that we may more fully demonstrate the principles revealed through his discoveries; always remembering that his work has been confirmed clinically by thousands of physicians in myriads of instances.

When your laboratory experiments fail to confirm what clinical experience has so abundantly proved, look well to your laboratory method. Check up your laboratory work; *it* must be faulty, either in method or in technique. Don't forget! the clinical test when rigorously conducted is the most sensitive test possible.

With regret we must admit that laboratory workers, thus far, have fallen short of their opportunity; having failed to devise and carry out new and specially designed experiments calculated to define and elucidate the law governing in these known clinical results.

Too much time is consumed in repeating experiments that frequently have been designed by our opponents to defeat the very purpose for which our laboratories have been created.

But, you contend, the true scientist has no prejudice, he accepts truth even though it runs counter to all his theories. That, gentlemen, is but to assert, "there are but few scientists in medicine," for have not innumerable experiments proved the prophylactic effects of vaccination; the curative action of the

nosodes, homoeopathically prescribed; as well as the action of the law of similars in the physical, psychical and dynamic fields? Yet strenuous opposition to acceptance still exists.

Our workers must develop a greater power of initiative. We need original thinkers and ingenious delvers into the hidden paths of nature. Men who can conceive great plans; develop delicate devices and institute new lines of experiment and research. Men who are not blinded by the results of our opponents, but who, guided by clinical experience will through the laboratory search for new and convincing proofs of the relation between drug and disease.

There is abundant and brilliant opportunity for research work along the line of causative factors in symptom relationship; wonderful work possible along the line of the physiologic reflexes and the referred pains; the grouping of natural and necessary complexes upon physiologic basis, making it possible through such groupings to more surely select the simillimum; the interpretation of symptoms; the definition and use of antithetical symptoms; the question of dosage in given symptom complexes; these and a thousand other questions, still beyond the ken of the laboratory expert, offer abundant opportunity for name and fame to the untiring, intelligent, resourceful inquirer of nature. Are you ready to prepare for the task; or is money, the profits of a lucrative practice, the goal for which you are aiming? Gentlemen, I pray you, let your aim be high, far above mercenary gain; let it be for the benefit of mankind through the development of the science and art which you have chosen for your lifework.

Be assured that proper zeal undoubtedly will unravel many a therapeutic problem and clearly reveal the import of many phenomena still enshrouded in mystery.

Proof of such possibility may be found in many of the results already unwittingly attained in the search for other and not related facts: for instance, the varying effect according to dose administered, is well illustrated in the experiments made by W. H. Thompson. He found that the effects of the intravenous injection of peptone differ according to the amount introduced into the circulation. If less than .02 gm. per kilogram of the body weight be added, coagulation of the blood is hastened, but if more than that amount is added coagulation is retarded. Horne has observed a similar peculiarity with the salts of the alkaline earths, he found that though coagulation

does not take place in the absence of a soluble compound of one of these elements, and though the addition of a small quantity hastens coagulation, the addition of a greater amount than .5 per cent., retards the onset of coagulation. It has also been demonstrated that "as a result of treatment by certain drugs, especially arsenic, as well as when an intercurrent acute infectious disease has attacked a leukaemic patient, the number of leucocytes is seen to undergo a marked diminution. Again, when a large quantity of normal saline solution is injected into the circulation, the specific gravity of the blood falls, but rises again rapidly and does not cease to rise until it reaches a higher level than obtained previous to the injection. Another interesting and instructive observation is, that "an irritant which leads to inflammation must during the retrogressive process which constitutes resolution, at some time be weakened to such an extent that it no longer acts as an irritant but as a stimulus, therefore the subsidence of an inflammation must of necessity be accompanied by repair."

Again, the X-rays undoubtedly have induced in healthy tissues, forms of malignant change similar to those for which they are employed therapeutically with curative effect. These few instances will show the importance of further and far more refined laboratory work, for the purpose of determining the suitability of given dosage for the development of definite and specific results.

Again, the development of the opsonins, which may explain the results of serum therapy, may surely be induced through the action of drugs which bear a symptomatic similarity to the diseases against which they are employed: witness the prompt reaction to bryonia, rhus, baptisia, etc., in typhoid; arum triph., belladonna, etc., in scarlet fever; mercuric and mercurous iodid, kali permanganicum, etc., in diphtheria; also note the fact that similar curative results may be observed in every form of disease that is susceptible of similar analysis by our present means. All of which has been made manifest through clinical experience.

Instances might be multiplied indefinitely, but the foregoing are sufficiently marked and varied in type, to illustrate the importance of laboratory experimentation for the purpose of determining questions of vital interest to homœopathy.

Our laboratories, in addition to an extended study of drug action, which should be their main object, surely can find abun-

dant opportunity for most interesting work in these various fields of research.

Here let me caution against the attempt to prove our remedies upon animals. Hahnemann sounded the warning against this practice in the essay already referred to. This essay, although published in 1796, will more than repay a careful study. It will afford abundant food for interesting thought and lend fresh zest to a subject that usually is approached with hesitation, if not with positive dread, by the average student of medicine.

I cannot impress too forcefully upon you that the basis of all therapeutics must be law. No therapeutic measure, be it mechanical, chemical, medicinal or purely dynamic can be effective save in accordance with some natural law of action. In their respective spheres such laws are unvarying and universal; their bounds have been set in nature by God, not by man. Man may discern them and be guided by them, he neither can create them or alter them; he may discover and utilize each, in its appropriate sphere, but beyond this his power is nil. Nature never acts by chance. Every effect must have its cause, and between the two, binding them in unfailing sequence, we find fixed and immutable law. It is worthy of note in this connection, that the farther man has penetrated into the secrets of nature with reference to disease and its cure, the more has been revealed the wonderful accuracy and far-reaching influence of the deductions made by Hahnemann.

Another feature of Hahnemann's teachings that has proved a veritable stumbling block to many, and has furnished abundant opportunity for ridicule to our opponents, is found in the use of the potentized drug. Even many of those who believed in the law of similars, refused to accept Hahnemann's views regarding the efficacy of the higher potencies. Many and heated were the arguments based upon the constitution of matter, as then understood. The materialists in our school looked upon the twelfth decimal as the extreme limit of divisibility of matter. Their arguments and conclusions being based upon the atomic theory seemed irrefutable, but these same materialists have been compelled to advance a long step upward, in accepting the modification of the atomic theory now commonly adopted. The atomic corpuscles though of infinitely smaller dimensions have assumed a role of greatly superior importance. Truly we may say, "there are forces, at present only vaguely

understood, forms of matter so subtle that it is almost impossible to say they are material."

The more recent objectors to the theory of dynamization now admit the possibility of the twentieth dilution: and so the procession is advancing, higher and still higher, as Hahnemann advised Hering on his failure to get effects from the second and third triturations of the *carbo vegetabilis*; and we have every reason to believe it will so continue until Hahnemann's thirtieth will be accepted by the most critical, as within scientific limits. Clinical evidence compels this conclusion.

In my early days we commonly entered upon our studies in the Missouri spirit of "show me," and those astute and accurate prescribers who taught us in "old Hahnemann," gladly accepted the challenge, and they did show us, to our confusion.

The strikingly brilliant and successful prescribing of such men as Hering, Raue, Jeanes, Guernsey, Lippe, Lilienthal, Dunham, T. F. Allen, Talbot, Thayer, the Wesselhœfts, Cushing, Angell and many others in the public clinics of Philadelphia, New York and Boston, as well as in their private practice, silenced even if it did not convince the skeptic and unbeliever. From the teachings of such men hosts of brilliant prescribers and teachers were developed. Hundreds entered the profession as avowed Hahnemannians and have made a lasting impression upon the profession. Their names will never die, they are indelibly written on the roll of fame and will remain as ensamples to all generations.

I trust, gentlemen, that many if not all of you, will become so imbued with the spirit that made effective the work of the early disciples of Hahnemann, that you may worthily take the places of those who did so much for the development of the profession they loved.

In conclusion, let me urge upon you and each of you, the importance of and responsibility involved in, the high calling to which you aspire. Some of you are just entering upon the course from which you hope so much, some are soon to complete the studies that will give you entrance to the full privileges of the profession. May each and all of you be governed by the highest ethical ideals of professional life and its duties. Scorn the spirit of selfishness that intrigues for personal gain. Be true, be honest, be generous. May your zeal for the right lead you into all truth. May your minds be so attuned to the love of mankind, that your every endeavor shall be for the good

of your fellow-man, physically, mentally, morally and spiritually, and may the fruits of your labors make you rich in all that leads to the exaltation of the intellect and the enlargement of your spiritual view of life: then your joy will indeed be full.

Be true to your faith in the law. Be exact in the application of its principles. Be faithful to your clientele, and last, but not least, be faithful to your ALMA MATER.

"EAR ACHE."

BY

JOSEPH V. F. CLAY, M.D., PHILADELPHIA.

(Read at the October meeting of the South Philadelphia Homœopathic Medical Society).

THE importance of aural pain, in spite of the light which modern research has shed upon the diseases of the ear, is not well appreciated. We gather this information from the many inquiries of: What is good for earache? or, What do you think of this or that preparation for otalgia? It may cause no little chagrin, upon the part of the physician, to find that the earache, which he has been treating with drops, is due to some dental condition. On the other hand, the case which has been diagnosed as acute enteritis in a child, or neuralgia in an adult, will not add to the physician's credit when the appearance of discharge from the ear relieves all symptoms. With our present-day methods of examination these errors seem inexcusable, for a local examination would prevent these mistakes in diagnosis.

It will surprise you, after studying aural pain carefully, to discover how much can be learned by a careful consideration of this in association with other symptoms. The information thus gained will impress you with the necessity for confirmation, by careful inspection of the ear with the head mirror and aural speculum. Thus you may arrive at a correct diagnosis and outline proper treatment.

Very young children cannot tell you of pain in the ear. As in other inflammatory conditions, in these little subjects, pain in the ear is usually accompanied by fever. This may amount to a hyperpyrexia, with vomiting, flushed face, rolling of the head, and in many instances convulsions. In some of these

cases the only ground for suspecting that the pain is in the ear, will be the patient's constant pulling of the pinna, and this is not reliable. It is rather a common clinical observation to have these cases present frequent and loose evacuations of the bowels, leading the physician to a diagnosis of an enteritis. During the eruption of the teeth, especially the canine, it is not uncommon to have this symptom complex present. It is safer in these little cases to positively exclude the ear as a source of trouble by careful inspection of the drum-head.

Pain in the ear occurs as a symptom in all acute inflammatory conditions of the auricle, external auditory canal, middle ear tract and mastoid process. The necessity therefore of locating the lesion is at once apparent.

The pain associated with the acute inflammatory conditions of the auricle needs but a word, for the lesion is usually apparent. Perichondritis is perhaps the most common lesion causing pain in this location, and is of a burning, throbbing character, and is due to the tension caused by the exudation of serum beneath the perichondrium. In gouty and rheumatic subjects pain in the auricle is occasionally encountered. The cartilaginous portion in these cases may be quite sensitive to manipulation.

In inflammatory conditions of the external auditory canal the pain is usually deep seated, constant, and gnawing in character; and referred anteriorly. It is further characterized by its aggravations, namely, by any act which causes the slightest motion of the auricle or canal. This may be elicited by grasping the pinna, and making traction in any direction. The pain is further intensified by making pressure just anterior to the tragus, or by having the patient perform the act of chewing. The symptom of pain in the inflammatory affections of the external auditory canal is usually attended by swelling of the walls. This will narrow the lumen, and if complete closure occurs tinnitus and dull hearing will supervene.

These symptoms will occur after the pain has existed for a time, and do not appear with the onset of the pain. If the swelling extends beyond the canal, the parotid region will become swollen (occasionally the tissue over the mastoid region will be involved). When discharge is associated with pain in external canal conditions it is usually small in amount and purulent in character; but, if due to a diffuse acute dermatitis, there

will be marked exfoliation of epithelium, and a scanty, thin, offensive discharge.

Pain in the retro-maxillary fossa, between the angle of the jaw and the mastoid process, is frequently a symptom of Eustachian inflammation. This pain, or soreness, is aggravated by swallowing, and seen in cases of acute follicular and peritonsillitis, also in acute nasopharyngitis. It is common to have patients complain of "pain shooting into the ear," or "a sensation as if the side of the head were numb"; these are the various expressions in this class of cases.

If the swelling of the walls of the tube is sufficient to interfere with its function, dull hearing will occur. Examination of the membrana tympani will reveal a retracted drum membrane, with at times some injection.

The pain of acute inflammatory conditions of the middle ear is usually quite characteristic. It is preceded by fullness and tinnitus. It is paroxysmal, coming in sharp, lancinating, pulsating attacks, reaching an acme, then declining, but not disappearing entirely. It is aggravated by any act which causes an opening of the Eustachian tube, such as blowing the nose, coughing, eructating, swallowing or sneezing. The intermittent character of this pain is deceptive, and leads one to believe that the condition is subsiding. The patient may suffer paroxysms of pain during the entire night; these will subside in the morning to recur again the following afternoon or evening; hence, the necessity for an accurate determination of the condition presented by the drum head. The appearance of discharge associated with pain of the middle ear conditions occurs variously from 6 to 24 or 48 hours after the onset of the pain, and marks spontaneous perforations of the drum. This usually gives the patient partial or complete relief, depending upon the drainage furnished by the rupture of the drum.

Pain as a symptom in inflammatory conditions of the mastoid process is deep seated, boring and constant in character referred to the mastoid process. Palpation of the three cardinal points (antrum, tip and emissary) will elicit tenderness. Inflammation of the mastoid is almost invariably secondary to a middle ear condition; therefore, we will obtain a history of a pre-existing middle ear pain with discharge.

It is possible to have pain referred to the mastoid in myalgic conditions of the trapezius, splenius capitis, and sterno-mastoid muscles. In fact, it is possible in these conditions, to have con-

siderable tenderness upon palpation, and only a careful history and examination of the canal and drum head will enable one to exclude the mastoid. Oedema and redness of the mastoid process are symptoms associated with mastoid pain, but are of late development and should not be waited for to make a diagnosis.

The mastoid process may be the seat of pain and present objectively, oedema and redness as a result of a circumscribed inflammation of the posterior wall of the external auditory canal; here again the history and objective examination will lead one to a correct diagnosis.

Pain may be referred to the ear by pathological processes in the neighborhood. We may have pain referred to the ear as a result of carious teeth and other dental condition. This is perhaps one of the most common causes for reflex pain in the ear. Ulcerations at the base of the tongue, in the region of the epiglottis and larynx, may refer their pain to the ear on the corresponding side.

NOTES ON GASTRIC AND DUODENAL ULCERS.—C. Graham states that, after reviewing his case histories from 1906 to 1915, he cannot find any pathognomonic symptoms or group of symptoms whereby he may reasonably locate peptic ulcer. It is not difficult to diagnose the presence of a peptic lesion, but it is quite difficult to determine whether the lesion is gastric or duodenal. Nevertheless there are some points that aid in their differentiation. In the whole picture, the coming and going of symptoms are not so distinctly seen in gastric ulcer. The pain in the gastric form often comes earlier after food (within 1 to 2 hours, in one-half the number), and frequently ceases in a short time, or before the next meal. It may return after a brief intermission, to be eased by the next meal, or the distress is such that food is refused lest pain be increased. This is more often the case in gastric than in duodenal ulcer, unless complications are present. When adhesions and perforations are present in any ulcerative lesion, and more so in those well above the pylorus, pain may begin sooner after food intake. This early pain is due apparently to peristaltic movements, tugging at the sensitive adhesions, quite as much or more so than to any acid fluid acting upon the chronic ulcer or open wound. Pain that comes immediately or soon after food intake seems to point to cardiac, fundic or other extensive ulcerations, perforations, adhesions, or obstructions. Coarse and large amounts of food may increase pain in any ulcer, but more constantly in gastric rather high in position, and high ulcers often seem to have periods of shorter duration (1 to 5 days) and shorter intermissions, or remissions which show a lighter grade of symptoms and tend to constant complaint. Duodenal or pyloric ulcers more often run an exact course day by day for days or weeks with decided food ease.—*Boston Med. and Surgical Jour.*

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FIFTY-SECOND SESSION

THE CRYPTOGENIC FEVERS.

BY

CLARENCE BARTLETT, M.D., PHILADELPHIA.

THE term "cryptogenic fever" is one of convenience, and is used to designate certain febrile illnesses relatively free from associated symptoms and pursuing a prolonged course. In other words, cryptogenic fevers are obscure fevers, and for the time being are incapable of diagnosis. Such cases are fairly common in both private and hospital practice, and usually cause considerable annoyance to physician and patient alike until the problem is solved. Sometimes the solution is never reached with certainty. Take, for example, the following case in which I was interested, though not the physician in attendance. A boy aged ten years returned from his summer outing apparently in the best of health. He signalized his arrival home by eating liberally of incompatible foods, and the following day was stricken down with a temperature of 102° F. and some slight epigastric pain. At this stage the diagnosis was clear. But in another 24 hours, the pain in the stomach disappeared, and the patient was absolutely symptomless aside from the fever, which was decidedly irregular and ranged all the way from slightly above normal to 103° , the pulse remaining at 72. His physician at first diagnosed intestinal auto-intoxication, but a few days later suggested follicular throat trouble by reason of a small accumulation in one tonsillar crypt but without redness, and no constitutional symptoms. The abdomen was not tender. The spleen was not enlarged. There were no rose spots. The relatively slow pulse suggested typhoid fever. But the blood count showed leucocytes 7,000, polymorphonuclear, 59 per cent.; mononuclears, 33 per cent. Typhoid fever has leucopenia, and was of course negatived. After one week of this symptomless

fever, recovery took place. Personally, I hold to the original diagnosis of gastro-intestinal auto-intoxication for there was enough cause for such a condition, and I have seen numerous cases of like character in which the pulse was relatively slow, and diagnostic symptoms in abeyance. These cases represent probably the majority of the cryptogenic fevers of short duration, *i. e.*, of less than one week. The anxiety attendant upon them is short lived.

More important are those running a prolonged course, because many of them are of a serious nature, and unless diagnosed early are pretty certain to result disastrously. In the past, the study of these cases has been obscured by the introduction of a theory that many of them are purely neurotic in origin, a theory that seems to have had the support of eminent authorities. A number of years ago, I was called by a professional friend to see a young woman who had been running a high temperature for several weeks. The question I was asked to decide was the possibility of the fever having a nervous origin. The patient had had about all the trouble that could befall any woman, and there was certainly a cause for a nervous breakdown. Her fever was of the remittent type. Each day it reached 104° or thereabouts. She had not emaciated in the least, and did not present an anæmic appearance. Most careful and repeated examinations failed to find the slightest plausible explanation for the pyrexia. The "steep curve" however led me to suggest that the fever was of septic origin, with primary pelvic infection. The pelvis was suggested only because we were denied physical examination of that part; and every other portion of the patient was certainly normal. After a period of two weeks, there was an escape of pus by the rectum, following which the patient became emaciated and anæmic. She refused operative interference and ultimately died, the victim of a septic infection.

Twelve years ago, I was called to a case the diagnosis of which was at the time clear. I mention it in this connection because one of the world's eminent neurologists had diagnosed hysteria, and had in accordance with that opinion insisted upon her going out doors each day, and this despite a daily maximum fever of 104° . The illness had already existed four months, and followed a long series of worries. The patient had an acute endocarditis when I first saw her, the clinical features consisting of a highly irregular and rapid pulse, anæmia, and

steeple temperature. Ultimately, she recovered though with a badly damaged heart. These cases in my experience have come about as near to nervous or hysterical fever as I believe we can ever reach, and yet it is very plain to any one that they represented interesting examples of septic fever. In other words, I believe that hysterical or nervous fever should be eliminated as a possible diagnosis in any and every case. At one time, authorities accepted it as of common occurrence. To-day they are looked upon askance, although still finding mention in standard textbooks.

Osler,* for example, refers to three types of hysterical fever, as follows :

"(1) Instances in which fever is the sole manifestation. These are rare, but I (Osler) have seen cases in which the chronic course, the retention of nutrition, and the entirely negative condition of the organs left no other diagnosis possible. In one case, the patient had for four or five years an afternoon rise of temperature reaching usually to 102° to 103° . She was well nourished and presented no pronounced hysterical symptoms beyond a form of interrupted sighing respiration so often seen in hysteria. There was a marked neurotic history on one side of the family.

"(2) Cases of hysterical fever with spurious local manifestations. These are very troublesome and deceptive cases. The patient may be suddenly taken ill with pain in various regions and elevation of temperature. The case may simulate meningitis. There may be pain in the head, vomiting, contracted pupils, and retraction of the neck,—symptoms which may persist for weeks—and some anomalous manifestation during convalescence may alone indicate to the physician that he has to deal with a case of hysteria, and has not as he perhaps flattered himself, cured a case of meningitis. . . . There is also a hysterical pseudophthisis with pain in the chest, slight fever, and the expectoration of blood-stained mucus. The cases of hysterical peritonitis may also show fever.

"(3) It is a suggestive fact that the cases of paradoxical temperature reported of late years in which the thermometer has registered 112° to 120° or more have been in women. Fraud has been practised in nearly all these cases."

Notwithstanding the high authority above quoted and the positive statements made I fail to be convinced. In 1894, I

**Principles and Practice of Medicine*, 8th edition, p. 1102.

wrote on this subject*, "Hysterical hæmorrhages and hysterical pyrexia are almost invariably examples of deception or mistaken diagnoses, In one case in my wards at Hahnemann Hospital, the high temperature (110° F.), was secured by placing the thermometer against hot water bottles when the nurse's back was turned.

Aschaffenburg† says that in hysteria "a rise in temperature may be caused by vaso-motor influences. The expression hysteric rise in temperature would be more apposite than that of hysteric fever, because the usual concomitants of fever are generally absent."

Jeliffe (*Osler's Modern Medicine*, vol. 7, p. 846) says: "A diagnosis of hysterical fever should be made only after every possible cause for hyperthermia has been excluded. A diagnosis of hysteria founded on fever alone is untenable." To this opinion I most heartily subscribe. The hysterical fever has gained such a foothold on medical authority mainly by tradition that it is difficult to displace it. Until within recent years, illnesses were seldom examined any too critically, and bizarre cases were accepted without question. The modern school of physicians insists that it be shown how and why, and refuses to accept conclusions without reasons. Under rigid examinations as now conducted, cases of hysteric fever sink to the common place or are relegated to the class of arrant frauds.

The non-recognition of hysterical fever as a clinical entity does not deny the existence of nervous agencies influencing the course of fever due to physical causes. On the contrary, it is within the everyday experience of all that mental unrest can cause aggravation of pyrexia, and we take cognizance of this fact in demanding mental and physical rest as a necessary factor in the management of febrile processes generally. It is quite a common experience to admit to hospital a typhoid patient with a temperature ranging around 103° to 104° , and yet within 24 hours, the fever recedes to 101° or a trifle above, and never again throughout the course of the illness does it approach a dangerous height; and we all say that its benign course is due to the restful hospital atmosphere. The high pyrexia prior to admission we attribute to nervous influences.

*Goodno's *Practice of Medicine*, p. 780, vol. 1.

†Curschmann's *Textbook of Nervous Diseases*, vol. 2, p. 858.

In another class of cases, the high fever seems to be an idiosyncrasy of the individual. All of us have among our clientele, subjects who acquire high fever in response to relatively light lesions or infections. For example, I have seen a temperature of 104° F. with nothing more serious than a small abscess at the root of a tooth. But, and this is usually the important point in these cases, the patient generally acquires a high fever no matter what may be his illness. Family physicians generally know these patients well, and permit the thermometric findings to give them little or no worry. In the case of fever of 104° F. with abscessed tooth, I was the third physician brought to the patient, a married woman of 40 years of age. The fever had already continued over two weeks, and was symptomless. She was then brought to Hahnemann Hospital. Some slight pain and tenderness developed in the face. Operation removed a few drops of pus, and she made a good recovery.

The prolonged cryptogenic fevers giving us the most concern, and affording our most difficult problems may be included under four headings, and comprise probably about 95 per cent. of the cases. These are as follows: (1) Typhoid fever; (2) the para-typhoid fevers; (3) tuberculosis; (4) sepsis.

There are numerous other conditions which may give rise to what is at the time regarded as a mysterious or unexplainable fever, but with very few exceptions indeed, they present distinct features which make their recognition easy if the trouble is taken to make a complete investigation.

1. *Typhoid Fever*.—It is now generally admitted that the diagnosis of typhoid fever cannot be made by symptoms alone until the appearance of the rose spots and the enlarged spleen, which means a delay of at least five days. The much-vaunted Widal reaction valuable though it is, may be greatly delayed. In one of my cases, it was not obtained until the patient was well advanced in convalescence. The pulse-temperature ratio, I have always regarded as a valuable early aid, not because the relatively slow pulse is especially characteristic of typhoid fever in its early stage, but rather that it is commonly absent in those diseases with which typhoid fever is especially liable to be confounded. Occasionally it may lead to a wrong conclusion; but as a rule, it will indicate correctly, especially if associated symptoms and the history of the case be taken into account. Of the early laboratory findings, a diminished leucocyte count may be regarded as of great value. Of course it is not

always present. When, however, one considers that certain of the cryptogenic fevers are always attended by a leucocytosis, a leucopenia or even a normal white count must be accepted as having great positive value. The most reliable sign of all is the presence of typhoid bacilli in the blood as determined by blood culture. One might think that this would go hand in hand with the Widal reaction; but in one of my cases in which the blood culture was positive in three days, the Widal did not become positive until two weeks later. In a general way, the old dictum to the effect that any fever continuing over three or four days, and not associated with any evidences of local disease is almost certain to prove to be one of typhoid, remains a good working rule. As signs confirming the provisional diagnosis, may be accepted the following: Pulse rate disproportionately slow to the temperature, leucopenia or at least leucocyte count not above normal, and positive blood culture.

Some difficulty may be encountered in the early diagnosis of typhoid in instances in which the patient happens to be a sufferer from some chronic ailment. This was well exemplified in a case seen by me a number of years ago. A man, aged 50 years, had had tabes for several years. Then he was seized with paroxysms of the lightning pains of frightful severity. In a few days, it was discovered that his temperature was high. By this time, however, the characteristic symptoms of typhoid fever, namely, the rose spots and the enlarged spleen, were present, and the diagnosis was not to be questioned. The illness pursued an uneventful course.

In another case seen with Dr. C. L. W. Rieger, a young man of 22 years had suffered from obstinate constipation and paroxysms of abdominal pains for several years. The day before I saw him fever with a temperature of 102° appeared, and the question of what the surgeons called the "acute abdomen" was raised. An examination showed nothing wrong whatever, other than the pyrexia and the constipation. There was neither tenderness, rigidity, nor disturbed peristalsis. An expectant course was advised, and in the course of three or four days, the rose spots, the enlarged spleen appeared, and a Widal reaction was returned as positive.

2. *Paratyphoid Fevers*.—These fevers are generally believed to be of rare occurrence. They are due to infection by special bacilli, of which two types are now recognized, namely, the paratyphoid A and the paratyphoid B. Infection by the

latter is more common in the proportion of about five to one. Symptomatically both infections present all the features of typhoid fever. Their only clinical peculiarity is that with but few exceptions they run a comparatively mild course. They give no Widal reaction. As in typhoid fever proper, the leucocyte count is low. Their recognition can be made positive only by appropriate agglutination reactions. The paratyphoid B infection not infrequently exhibits a temperature curve presenting marked daily fluctuations, and in a number of instances, has been followed by suppurative lesions. From a therapeutic standpoint, the differentiation of typhoid and paratyphoid fevers is unimportant, as their general treatment is the same. If, however, it is intended to institute vaccine treatment, it is absolutely essential to make a technically correct diagnosis, as the vaccine useful for either one of these is absolutely useless in the others. The diagnosis then is in the hands of the laboratory expert. A negative Widal in the presence of the characteristic symptom group of typhoid fever is not sufficient to establish a positive diagnosis of paratyphoid. The Widal may be delayed, and the case therefore one of typhoid fever.

Why, therefore, should we worry over paratyphoid fevers? We should not, but we do. Of course, it is important that we be right in our diagnoses; but aside from that,—the importance of which I am not underestimating,—there is no situation demanding that we worry. Only a little more than two years ago I was called to see the wife of a colleague who had been ill for about four weeks, and who had presented all the clinical features of typhoid fever, but with a negative Widal and negative blood cultures. The case might almost have been called classic but for rather more than ordinarily marked daily fluctuations of temperature. The husband was worried; the relatives were disorganized. The patient was influenced badly by the atmosphere of the sick room. At my suggestion, Dr. Sappington made the necessary tests for paratyphoid infection, and isolated the paratyphoid bacillus B. The patient made an excellent recovery.

When the paratyphoid infections are prolonged as they may be occasionally, the persistence of the fever is inclined to cause considerable anxiety lest some more serious infection should be at the foundation of the illness. Several years ago, I saw two examples of this and within a few weeks of each other. The first pair of cases was in the practice of Dr. G. W. Stewart.

Two small boys, brothers, exhibited a prolonged symptomless fever with evening exacerbations and morning remissions. Physical examination was negative. A suggestion of paratyphoid infection was made, but was not capable of confirmation at that time, the subject then being in its infancy. The patients made good recoveries.

The other pair of cases was in every way similar to the above, and was in the practice of Dr. T. F. Conover.

3. *Tuberculosis*.—Taking the ordinary fever with tuberculosis, the diagnosis is a simple matter, the rational symptoms and the physical signs making the necessary data complete. But tuberculosis does not always behave in this convenient way. Many have been the times in which I have known it to present as its only early symptom an evening fever with normal or subnormal morning temperature; and we have a right to worry. I have seen such cases pass through the hands of seven or eight acknowledged expert examiners, and returned as physically sound so far as they could discover. In these cases, the pulse is usually rapid as compared with the early stage of typhoid fever. As long as there is no secondary infection, the leucocyte count is normal or subnormal. It is in these cases that the X-ray is absolutely necessary for an early diagnosis. It might be urged that lesions large enough to cast a shadow would be evident to physical signs. This is so in part only. In nearly all of these cases, there is more or less extensive involvement at the root of the lungs. These are as readily recognized by the X-ray as they are inaccessible by ordinary physical examination.

In the fever of acute miliary tuberculosis, the X-ray is certainly a necessary factor in the examination, the plates showing changes disproportionately severe as compared with the physical signs.

4. *Sepsis*.—From the standpoint of the patient's safety, the septic fevers are of the greatest importance in the matter of early recognition. Necessarily, their treatment is surgical, and the earlier the operation is performed, the better will be the result. To delay a diagnosis until operation becomes either an execution or an autopsy is a discredit to internal medicine. The septic fevers are easily recognized by their three characteristics, steeple curve, leucocytosis, and the blood changes of secondary anæmia. The final problem, the determination of the source of

infection is not so easy. Of course, I am referring only to those cases in which there is nothing in the history of the case or in the associated symptoms to indicate a cause. The majority of these latent infections are intra-abdominal, and may be referred to any of the following localities: 1. The appendix. 2. The gallbladder. 3. The urinary tract. 4. The Fallopian tubes. The majority of the latent infections, however, originate in the kidneys or in the gall bladder, and to these points we should direct most careful search. Most of our errors in this field may be obviated by remembering a very simple precaution, namely, that of making systematic and complete examinations at each visit. The first examination may be negative or doubtful, while a second, third or subsequent one may establish incontestable facts.

The most excusable failures in the diagnosis of septic fevers occur in the case of septic endocarditis. The history of the case and serial examinations, and repeated blood counts and blood cultures offer early suggestions. In no type of heart lesions do the physical signs make such marked changes from day to day as in malignant endocarditis.

Some cases may simulate this disease very closely. In the case of a young girl aged 18 years seen by me with Dr. L. C. Wessels, a fever was running the septic curve. She had well defined mitral murmur and dilated heart which I was assured was an old condition due to rheumatic fever in childhood. She was decidedly anæmic. Widal was negative. The illness had then continued two or three weeks. A complete blood count was ordered, together with laboratory investigations as to the possibility of paratyphoid infection. The blood examination established a diagnosis of pernicious anæmia.

In closing, I would refer for sake of completion to Cabot's tabulation of the ultimate diagnoses in cases of fever. Among the long fevers, typhoid was by far more frequently encountered than all others combined, in the proportion of about five to two in fact. In order followed sepsis, tuberculosis, meningitis, influenza, infectious arthritis, leukaemia, cancer, syphilis, cirrhosis, and gonorrhoea. Of the short fevers, common colds including acute bronchitis, acute tonsillitis, acute pharyngitis, and acute influenza led the list. Then there followed in order, acute appendicitis, acute arthritis, salpingitis, pneumonia, lymphangitis, sinusitis, erysipelas, and poliomyelitis.

THE STATE TUBERCULOSIS DISPENSARY AND THE COMMUNITY.

BY

KARL SCHAFFLE, M.D.

As you have gathered here from different sections of our State, you have doubtless noted with considerable interest and a proper degree of pride, its varying physical and industrial features. Some of you have left the shore of the great Northwestern lakes and have passed over lands, rich in oil and gas and coal, others have left the city of steel and glass with its myriad stacks, at the junction of the Allegheny and Monongahela, while many have come from the fertile fields of the southeastern countries and from the great city of your student days. You may have been amused by the striking differences in speech and customs of the people in these communities, which together compose our Commonwealth. They differ in nationality, creed and intelligence according to the direction and rate of flow of the stream of immigration, while the condition of their bodies varies with their individual heredity, environment and mode of life. These peculiarities, however, are the subject of serious study when public health problems demand solution and the broad principles involved are to be applied with the greatest possible benefit to all.

There is no subject which serves as a better illustration of this than tuberculosis, which is constantly being more widely recognized as a community disease. Just as the prevalence of typhoid infection in a community indicates the quality of its sanitary engineering, so the tuberculosis morbidity rate may be used as a criterion of the adequacy of its housing facilities, the character of its industrial conditions and the degree of its social consciousness.

The success which has attended Dr. Dixon's activity in reducing the death rate from tuberculosis in Pennsylvania from 13 per thousand in 1907 to 9.9 per thousand in 1914, a saving of twelve thousand lives, has been due to his careful study of the needs of each community. Dispensaries have been established in each county at points which were most accessible to the majority of the inhabitants. In the cities, they occupy entire buildings and are open daily; in the larger towns, rooms are rented with office hours on certain days of the week, while

In thinly populated districts the office of the physician in charge is designated as the Dispensary and the work is arranged by appointment. The Dispensary physicians were chosen as representative members of the profession in their respective communities who are depended upon for their intimate knowledge of local conditions as well as for their high professional attainments. Graduate nurses are also provided who combine with their medical training the equally important qualifications for social service. They visit the patients in their homes and there demonstrate the application of the hygienic principles outlined by the physician in the Dispensary. It frequently happens that there are certain domestic conditions which prevent compliance with instructions, the details of which the patient may be unwilling or unable to explain to the doctor. These are studied by the nurse and adjusted by her with the advice of the Dispensary physician who frequently refers such problems directly to the Commissioner of Health. In this way the Dispensary serves as a close connection between the central authority and the most trying local situation, and in order to satisfactorily fulfil its functions it must reflect with fidelity the life of the community.

The Pennsylvania State Tuberculosis Dispensary stands as a social center, to which the tuberculous poor may turn for guidance, treatment and material assistance. It is a collecting station for Sanatorium applicants, where they are classified and are given the preliminary instruction so essential for the intelligent acceptance of institutional discipline. It is the seat of the supervision of home treatment for patients who cannot be prevailed upon to enter Sanatoria, and for those who have returned and are passing through that critical period of adjustment to the burdens of ordinary life.

Sputum cups and paper napkins are distributed by the Dispensary and specimens of sputum collected for examination. Milk is provided for those in need of supplemental food and pamphlets of instruction are furnished in different languages. Tubercle extract and suspension are administered by the physician in selected cases and the effects noted by the visiting nurse. In addition to the patient all of the other members of his family are examined for the discovery of incipient cases, and his social as well as his industrial "contacts" are investigated. Homeless persons dwellings after the removal or death of a patient is arranged through the Dispensary.

The Dispensary is the starting point for the spread of propaganda for infant welfare, fresh air schools, the abolition of the spitting nuisance and the improvement of housing conditions. To the general public it serves as a bureau of information in regard to the causes, character and prevention of tuberculosis with especial reference to the means of cure afforded by the State. It extends to the medical profession the opportunity of happily disposing of that once distressing puzzle, the indigent consumptive, providing consultation in doubtful cases and isolation for the far advanced.

The interests of the family doctor are closely guarded and applicants who are found to be non-indigent are referred to their physicians.

As the profession and public have awakened to their opportunities the work has increased, until now we have over eleven thousand patients attending the Dispensaries and approximately two thousand in the Sanatoria. But from the number of certificates of death from tuberculosis annually received by the Bureau of Vital Statistics it is estimated that we still have about sixty thousand consumptives in Pennsylvania. Health exhibits, lectures and newspaper articles are reaching the people, but the greatest impression is made by the works of the patient's own physician.

If you will visit the Dispensary in your home town or take the opportunity, while here, of inspecting the Mont Alto Sanatorium you will see that we have the machinery, for the work before us, but the ideal to be realized is *eradication* and toward this end we ask your co-operation.

STRYCHNINE IN BROKEN CARDIAC COMPENSATION.—Newburgh, (*American Journal of the Medical Sciences*, May, 1915), reports that neither pharmacological nor clinical evidence justifies the use of strychnine in the treatment of acute or chronic heart failure. In none of the eight cases of broken compensation in which its effects were carefully studied, was the patient benefited. Compensation was not only not improved in the slightest, while four of the cases subsequently recovered compensation under the use of digitalis. Two died in the hospital and the remaining two were discharged unimproved. The failure of strychnine, the author believes, cannot be explained by assuming that the patients were beyond all therapeutic aid, since, as mentioned, half of them did regain cardiac compensation when given digitalis. These did not recover during the giving of strychnine because strychnine does not improve the work of the heart.

**THE SANITARY DISPOSAL OF EXCRETA WITH SPECIAL REFERENCE TO
PARASITIC DISEASES.**

BY

CH. WARDELL STILES, PROFESSOR OF ZOOLOGY, UNITED STATES
PUBLIC HEALTH SERVICE.

MR. PRESIDENT, LADIES AND GENTLEMEN :

THE most important, and in some respects the most perplexing, single, sanitary problem of the day is the disposal of human excreta.

Inside our bodies we have certain waste products which, so long as they remain there out of sight and smell, we think of but little, and when we do think of them as still inside our body, they do not seem especially offensive. But as soon as these excreta issue from the body, be they passed per nares, per os, per anum, or per urethram, we instinctively look upon them as offensive.

Consider the sputum an instant. This issues from our mouth. We instinctively avoid putting into our mouth anything that is not considered clean; and we would not think of putting into our mouth a piece of bread upon which we had discharged sputum; yet, when the sputum is in our mouth before discharge, we do not reflect upon its offensiveness. Upon its discharge, our entire attitude toward it changes.

Likewise our attitude toward the discharges of our bowels, our nose, and our bladder, changes completely from the moment these substances issue from us. This peculiar difference of attitude toward one and the same substance, according to whether that substance is inside or outside our body is remarkable, yet fortunate, for if we were as disgusted with our excreta when they are inside our body as we are when they are outside, our existence would indeed be an unhappy one.

It is indeed interesting to note that although we are perfectly contented to have excreta inside our bodies, the thought that they might return to our inside after they have once passed outside is scarcely less than revolting, and in contemplating this thought we naturally think of the insane and the dogs.

While the deliberate and intentional eating of one's own excreta is confined in this country largely to the insane and the dogs, let us not forget that a considerable portion of the people

of the United States, as well as of other countries, unconsciously swallow human excrement. For instance, recently I have examined 1,287 school children in the city of X and by means of certain microscopical tests the point was definitely established that of 776 white children, 218 pupils, or 28 per cent., gave positive proof that they had actually swallowed human excrement; the figures for the negroes were somewhat higher, for of 511 negro pupils, 246 children, or 48 per cent., gave definite proof that they had swallowed human excrement.

The statistics just quoted may be taken as conservative for our Southern cities of about 30,000 inhabitants, and I have proof that this same unconscious coprophagia occurs as far north as New York.

These figures are at first thought startling, and they prove that despite our natural abhorrence of our excrement we are not sufficiently careful in disposing of it to prevent its consumption, at least in small amounts, by a considerable portion of the population.

The disposal of the excreta is complicated by the point that so many different factors, theoretical and practical, come into consideration.

In the first place there are the theoretical factors involved in considering the destruction of bacterial, protozoal, and verminous life; then the theoretical factors of plant and of animal life in the locality; then the theoretical factors involved in the different kinds of soil; then the practical factor as to just what people are willing to do; finally, the great question: "How much will it cost?"

Some time ago before a State Health Officers' meeting, I discussed the subject of sanitary privies.

Following my paper many questions were asked. Summed up in a few words, information was desired that would enable people not interested in sanitation to build a privy that would be thoroughly efficient but would cost practically nothing in money, thought, or labor, either for construction or for maintenance. My reply was that the only thing I could suggest that would meet all the requirements mentioned was the use of a drug to produce chronic constipation in the entire community.

For cities, there is of course only one general plan to be recommended, namely, a sewer system.

For small towns that can not afford a sewer system, the privy seems to be the only available substitute. The problem there-

fore is: What kind of a privy should be built and how should the excreta be disposed of?

Experience shows that a movement looking to the installation of a uniform system of privy-service in a town is more likely than not to lead to opposition. The reason is that in general people lack what may be called "privy sense." They void their excreta, not yours; they void on their premises, not on yours: accordingly, what business of yours is it what kind of a privy they build, or whom they hire to clean it, or whether it is ever cleaned at all?

For practical reasons, I would urge that the development of a "privy sense" in any town is the first important point to be held in mind in a campaign for the disposal of the excreta. A sufficient number of the citizens must be convinced of the necessity for improvement in order to control public opinion, and the health officer who attempts to *drive* citizens into improvement instead of *leading* them, can make up his mind that he must prepare for a hard fight, with probably a short term in office. If a privy-sense be developed intelligently, the rest of the problem is not so difficult.

Coincident with developing a privy-sense in a community, the truth should be fostered that a privy is not a private structure but a public one, and that it is the center of an influence for good or bad which radiates not only in the direction of the home to which it belongs but also in all other directions, to the neighbors, hence that the control and disposal of the privy contents is a municipal function rather than a duty or privilege belonging to the owner.

As for the particular style of privy and the exact method of disposal of its contents, I would lay down the fundamental rule of holding to high ideals regardless of the question whether these ideals are accepted or not. In other words, try to install water-tight, fly-proof privies of the receptacle types, and dispose of the contents by means of a municipal incinerator or other uniform treatment. Even if it is necessary temporarily to use burial instead of incineration, I would still hold to the ideals by preaching incineration as safer than burial, and thus I would place the responsibility upon the town, rather than upon the health office, for any complication that might result from the adoption of less efficient methods.

The installation of proper, water-tight, fly-proof privies in a town, and the municipal scavenging of these privies, are thor-

oughly practical and business propositions that mean decrease of unnecessary disease, average increase in length of graves, decrease of the burdens that rest upon American mothers, and increase in the health of American women, for it is they, not American men, who suffer most when there is sickness in the family.

Turning now from the towns to the open country, we find that the farm presents the real problem when it comes to the proper disposal of excreta. Before passing to details, let us clear the atmosphere as to policy. Shall we preach the same doctrine on the farm that we do in the town, or shall we lower our ideals and for practical reasons be content with lower standards?

Let me put the question in another way. Suppose a clergyman were to go to a town church and announce as his text: Exodus 20: 15, reading, "Thou shalt not steal." Suppose this same clergyman preaches at a country church the next Sunday, uses the same chapter and verse as his text, but as a concession to the rural districts modifies the wording of his text to read, "Thou shalt not steal unless thou art too lazy to work." In the town he preaches a high ideal; in the country he preaches a compromise. In the town he trains up honest people; in the country he trains up people to prey upon each other and upon the town folks. You tell me that the two-faced plan submitted for your imagination is too utterly ridiculous for consideration and that the clergyman should preach the same high ideals in the country as in the town. Your reply is unassailable.

If now we preach the same high ideals in town and country when it comes to *honesty* in respect to preservation of property, why should we not preach the same high ideals in town and country when dealing with human life? To preach a high ideal in town and to be content with a lower ideal on the farm is an injustice to the already much over-worked women on the farm, and an injustice to the town women whose families are supplied with milk, fresh vegetables, meat, and other foodstuffs that are or may be directly affected by the sanitation installed on the farm. How often is the clergyman called upon to blaspheme, by repeating the words "The Lord giveth, the Lord taketh away, blessed be the name of the Lord" at the funeral of some child, whose attack of typhoid fever was really due to the fact that so many people take it for granted that sanitation on

the farm is of necessity of a lower standard than sanitation in towns!

As a fundamental proposition I wish to urge that the same ideals be preached to farmers, in respect to preservation of human life as well as in respect to preservation of personal belongings, that are preached to townsfolks. If these ideals are not adopted immediately, there is no more reason for our being discouraged than there is in the case of the clergyman, when he hears of some person who has stubbed his toe against one of the Commandments, despite the fact that the clergymen have repeated the Commandments for centuries.

In other words, gentlemen, I am heartily out of sympathy with the plan followed by some workers who, even within this past year, have taken the position that the intelligence of the rural population is not above the standards of the pit privy, hence for the farm this privy is good enough and should be certified in any rural area as a "sanitary privy."

Do not misconstrue me. I am free to admit that the pit privy is a great improvement over the average conditions in many rural localities in this country; further, I am free to admit that under certain conditions of soil and climate, the pit privy, or even that sanitary foundling known as the "umbrella privy" may be a distinctly good thing. What I object to is the action of a health officer in deceiving the farmer by preaching broadcast in rural districts a lower standard, a lower ideal, than he preaches in towns, and by certifying as sanitary a pit privy which, however good it may be, is in its last analysis a permanently leaking cess-pool. My position is that we must tell to the farmer, as well as to the townspeople, that privies should be fly-proof and water-tight, and that if they adopt a makeshift or a compromise, such as the pit privy, the moral responsibility rests upon them, not upon the health office, in case sickness or death results in the immediate family or in families using milk or other food products from that farm.

That the average farm must have an inexpensive or even a cheap privy is self-understood. A private septic tank, with subsoil drainage, is advisable if the farmer can afford it. An L. R. S., or a Kentucky privy, with proper subsoil drainage would be my second choice. An L. R. S. can be installed for much less than the cost of a funeral and if used intelligently, with privy sense, it will suffice to protect against all excreta-borne zoo-parasitic diseases that exist in this country.

There are thousands of farms at present which have no privy at all. Of 250,680 farm houses thus far surveyed in 653 counties, 125,584, or 50 per cent., had no privy of any kind. It would be too much to hope that all of these homes will immediately build septic tanks, L. R. S., or Kentucky privies. Nevertheless, I feel that we should continue to preach to these farmers just as high ideals in sanitation as we preach to the people in cities and towns and we should impress upon them the fact that if they depart from these ideals they do so at their own risk and on their own responsibility.

Next to the septic tank and the L. R. S. and Kentucky privies, I would place the pail-system, emphasizing the point, however, that the mere building of a pail-system privy does not end the job, for privies must be properly used, and properly cleaned. A pail-privy that is not properly cleaned ceases to be a true pail-privy and in operation becomes a surface privy.

The disposal of the pail-contents is not always an easy problem. It is best to empty the pail once a day, but if it is emptied once a week this will be more frequent service than is likely to occur on one per cent. of the farms. Emptying the pail is considered dirty work, even by persons who without murmur carry swill to hogs and shovel horse manure and cow dung.

Let us conceive of the pail privy as simply a storage place, where, for the sake of saving labor, excreta are stored temporarily. The final disposal of the material is as important as is its proper storage.

Burning or boiling the content is best and should be urged, but it is practically excluded on most farms because of the time, labor, and fuel required.

The next choice is the old law of Moses, found in Deuteronomy 23: 12 and 13:

"12. Thou shalt have a place also without the camp, whither thou shalt go forth abroad;

"13. And thou shalt have a paddle upon thy weapon; and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee."

The only difference between the rural sanitation recommended by Moses and the minimum we should urge to-day is one of detail, not of principle. The excreta are to be buried off in the field away from contact with people, so that nothing unclean shall be spread around the habitation; but according to Moses,

each person is to go to the field and dig, while according to the modern pail-privy system, labor, time, comfort, and modesty are conserved by setting aside near the dwelling a special place for voiding and for temporary storage of the excreta, which are carried away to a "place without the camp" where a shallow hole is dug in which the excreta are covered with top soil.

In the burial of excreta it is important to recall that the upper three-foot layer of soil is biologically more active than the lower strata, and that the deeper the burial the greater the possibility of contamination of water supplies, while the more superficial the burial the greater the possibility of bringing infection to the surface by washouts, by earthworms, insects, etc. We must choose between two dangers, and to me it appears safer to choose superficial burial in order to utilize, in destroying the body wastes, the numerous bacteria, protozoa, nematodes, and arthropods, that live in the upper three feet of soil.

To those who fear that this burial is practically an adoption of the principle of the pit privy, the reply is that safety in disposal of untreated excreta lies largely in the point of dilution without danger of promiscuous distribution that will bring the material in contact with man. In a superficial burial in a field the material has the benefit of a tremendously greater dilution with earth than it has in a pit privy near a house before it reaches the water supply at the house, hence the chances for its destruction by bacteria and animals as well as for its oxidation are immensely greater. The danger involved in having the material brought to the surface by earthworms and flies or the active wandering of some parasitic worms to the surface must be admitted, but this danger is lessened by selecting a field some distance from the home and by not using the field for any other purpose for about a year. No matter what precautions are taken, there will always be some danger involved in burial as compared with incineration, and this point should be made clear to the farmer.

While claiming that the properly constructed and properly maintained water-tight and fly-proof pail privy is next to the privies like the L. R. S. and the Kentucky, we must be prepared to admit that it will take decades, possibly centuries, before privies of these types will be installed on all farms. We must, therefore, be prepared to see many farmers adopt makeshifts and compromises of various sorts. To encourage the farmer to believe that in putting in a compromise-privy he is comply-

ing with ideals of modern sanitation is to my mind a short-sighted and dangerous policy. The subject should be explained to him and he should clearly understand the dangers involved in the compromise.

The compromise that seems to appeal most to the farmer is the "pit privy." This is practically a hole in the ground, that may or may not be open to visitation by dogs, hogs, chickens, flies, etc.

There are conditions under which a pit privy is practically suicidal; there are other conditions under which it is fairly safe; and all gradations exist between these two extremes. If a pit privy is the best that a farmer will build, it is our duty not only to urge him to make it as fly-proof as possible, thus at the same time excluding most other animals, but also to tell him that a pit is essentially a permanently leaking cess-pool which, though it will practically dispose of the zoo-parasitic diseases, always presents the possibility of contaminating the water supply and thus of spreading typhoid and certain other bacterial infections. Naturally, a deep bored and protected well is not so liable to become infected from a pit as is a surface well.

In marshy and in limestone districts the pit privy is especially dangerous.

Another compromise, found altogether too frequently on farms, is the surface privy that is entirely open in back. This privy is a magnificent fly breeder and disease disseminator. The man who permits a toilet of this kind on his premises is either innocently ignorant of the seriousness of his offence or he is criminally careless. A privy of this type can be changed at very little expense into a water-tight, fly-proof, pail-privy, but if the farmer will not do this, he should be urged at least to make the structure fly-proof by use of self-falling lids on the seats and wire screening in back and to face the outhouse to the North so as to have the benefit of exposure of the excreta to the Southern sun. This so-called "Sun-shine" privy is not ideal, but it has certain sanitary advantages over the pit, as well as certain disadvantages when compared with the pit.

In a campaign for betterment in these sanitary conditions, there are two elements in particular in the community that should lead in the work by setting an example. These elements are: local physicians and the public schools. How often in public health work the health officer is met with the remark:

"My privy is as good as that at the house of Doctor X or at the public school, and I guess that a privy that is good enough for a doctor is good enough for me!"

There is a third element in the community whose influence in public health matters is important, more important in fact than is ordinarily admitted by the medical fraternity. I refer to the lawyers. If I were starting a local public health movement in a rural county, one of the first things I would do would be to call on every local lawyer and try to get the local bar actively interested in the campaign. The county courthouse is a powerful point of radiating influence which should not be overlooked.

To summarize briefly: In disposing of excreta, with special reference to protection against parasitic diseases, I would urge:

First. A development of "privy sense" in the laity as fundamental and prerequisite to satisfactory success.

Second. In places where sewers and septic-tank systems are financially excluded, I would urge the construction of fly-proof, water-tight privies of the receptacle types, such as an L. R. S. or a Kentucky, and where feasible and safe with subsoil drainage, or a can or pail privy.

Third. In absence of the subsoil drainage because of local conditions, I would urge incineration or at least superficial burial of solid excreta in a field far removed from the dwelling and the water supply, and that this field should not be used for cultivation until the expiration of one year after the last excreta planting.

Fourth. Recognizing the fact that the ideals can not be attained immediately, I would continue to preach high ideals and to warn the man who adopts a compromise or a makeshift such as a pit privy or a sunshine privy that, while in many places these are improvements, they involve risk of health and life and in some localities are especially dangerous.

Fifth. Recognizing the fact that it is the mothers who must bear the brunt of trial and care in case of sickness in the family, I would take as fundamental premise in the campaign the fact that when a woman passes through nine months of anxiety followed by the ordeal of childbirth she has a right to expect that her husband will go to a little trouble in conserving the life of the child and in safeguarding the mother against unnecessary cares, sorrows, and death.

DISCUSSION.

DR. R. S. MARSHALL, Pittsburgh, Pa.: The privy subject is one that is not often discussed, but it has been very interesting to me, particularly because of the country wherein I spend my summers, northern Canada, where they have formulated pretty definite rules regarding the care of the excreta, which seem to be very successful and not very expensive to carry out. For a house of ten rooms, the system can be installed for less than one hundred dollars, exclusive of the plumbing; and that system is absolutely inoffensive and very effective. I take it that for a place the size of this house in which we are, the cost of installing it, if they had a way to carry off the purified fluid, would be a matter of very little expense; and I have always been of the opinion that it should be compulsory. I do not know what the arrangements are here; but in some places where I have been the arrangements have been very bad, and could easily have been corrected. I think that this should be insisted on, as it is in Canada.

There is another system in use there, in places where they have not sufficient ground to carry off the purified fluid to the septic tank, known as the chlorination process; and I believe that that does away with offensiveness and other trouble very well.

I wish to comment on the matter of Professor Stiles's assumption that the wet method is the ideal one for our cities. We carry off all excreta through our drains into the rivers. I think that it is the surest way of getting human excreta back into the human mouth; and I feel that as our cities get sufficient money, it is obligatory for them to correct that, and not spoil our beautiful rivers with this pollution.

DR. HEIMBACH: I wish to make a motion that we give a vote of thanks to Professor Stiles for this excellent paper that he has given us. (The motion was seconded and carried.)

DR. STILES: Might I just say that I was discussing the necessity of the sewer system. I was not discussing the proper ultimate disposal of the sewage.

DR. MARSHALL: Could you just speak a word about it?

PROF. STILES: My experience has been more with the rural districts than with the city problem; although I am working on the latter problem at present, with several other men. It seems to me that we ought, by all means, to carry out purification methods more than they are carried out to-day. The subject is a tremendously difficult one, and it is a matter of experience that it is largely a question of the amount of dilution of the sewage whether it becomes dangerous or not. The city sew-

age usually purifies itself in a river, if the volume of water is sufficiently large in proportion to the amount of sewage to be disposed of; but I believe that we ought to help nature along in that matter, and purify the sewage before it gets to the river.

DR. KLOPP: I wish to ask Professor Stiles a question. I do not clearly comprehend the difference between the Kentucky privy and the L. R. S.

DR. STILES: The Kentucky privy is a modification of the L. R. S., which consists of two barrels; one under the seat, connected with the effluent tank. The first barrel contains water up to the cross-pipe. The excreta are passed into the first barrel and liquefied, and then flow over into the second barrel. The pathogenic bacteria are destroyed to a considerable extent, and the excreta are reduced greatly in volume through liquefaction and evaporation. We have to dispose of the fluid in the effluent tank. The Kentucky privy is built of concrete. It is practically a three-tank L. R. S. privy with a sub-surface drainage. A pipe is led off to drain under the soil. The same system sometimes used in cases in which we use only two tanks.

DR. HEIMBACH: What chemical is employed?

DR. STILES: None. A chemical would destroy the bacterial action, and we depend on the bacterial action of the non-pathogenic germs to destroy the pathogenic and to liquefy. We sometimes use chloride of lime in the effluent tank just before emptying it.

TONSILITIS AND ITS SEQUELÆ.

BY

ANNA JOHNSTON, M.D.

IN our changeable climate we are called very frequently to treat cases of tonsillitis. With apologies to Tennyson, we might say: "Other diseases come and go, but tonsillitis goes on forever."

While tonsillitis has been considered, both by physicians and the laity, as a disease of little consideration, yet there are few acute diseases, if any, that can leave such a train of disastrous sequelæ as tonsillitis.

I have never lost a case of measles, scarlet fever, nor even diphtheria; nor have I ever had one of those diseases leave the patient in a serious condition, thanks to homœopathy, but I

have lost a child through myocarditis; a young high school girl, who had valvular trouble from metorrhagia; a young mother with empyema, and a matron of fifty from pulmonary edema, following pyelitis; all the sequelæ of tonsilitis; with these fatalities I can not but consider this disease a serious one, and well worth our study.

The acute form of follicular tonsilitis is a disease from which no age appears to be exempt, from infancy to old age; yet from the years between the second to the twelfth are the most cases found.

Histologically speaking, the tonsil belongs to the lymphoid tissue structure and is a part of the lymphatic system.

Its location is in the sinus tonsilaris, between the anterior and posterior pillars of the fauces. A capsule of epithelium, composed of connective tissue, surrounds nearly the whole of the lymphoid system.

Secreting glands are found imbedded in the loose connective tissue beneath the capsule.

Briefly, as to the bacteria found in the tonsils.—They are the streptococcus viridans, streptococcus hemolyticus, the staphylococcus, and the pneumococcus.

The streptococcus viridans is usually isolated from the mouth of the crypt or near the surface of the tonsil. This organism is probably the most common cause of the acute and chronic attacks, and is the variety found in the endocardial sequelæ.

The streptococcus hemolyticus is the most virulent. It is usually seated deeply in the crypts and is the cause of the suppurative tonsilar and peritonsilar processes. It is also the cause of the joint, muscle and nerve inflammation.

Pathology.—In follicular tonsilitis, the glands are œdematous, red and swollen, and a yellowish white secretion distends the crypts.

Symptoms.—As a rule the onset is sudden; often a chill, followed by a rapid rise of temperature; the temperature may go as high as 103, 104 or 105; aching all over, especially the head and back. There may be soreness and pain in throat, or this symptom may be absent, but it is generally best to examine the throat, some times the lymphatic glands in the angle of the jaw may be swollen, little white or yellowish spots of exudate are on the crypts; these spots may remain single or they may coalesce forming a pseudo-membrane, there is a distinctive odor to the breath.

Diagnosis.—Tonsilitis must be differentiated from diphtheria by a higher temperature. At the onset, lymphatic glands in throat are not so swollen as in diphtheria; membrane in diphtheria a thick, greyish white; edge irregular, surrounded by dark red area, spreading rapidly; if removed will bleed, and odor at times very offensive.

If there is any doubt of the diagnosis, a culture should be taken at once. History of case is always important.

In scarlet fever, we have the vomiting, bright, red shining fauces, and an erythema and tachycardia.

Sequelæ.—Few acute diseases have such a train of sequelæ as tonsilitis.

The most frequent complication is quinsy or peritonsilitis. This form of the disease consists of one or more abscesses between the tonsil and the enveloping walls. If both tonsils are affected at the same time there is danger of suffocation. The mouth can be opened with difficulty. If the Eustachian tube is involved, the hearing is affected, an abscess of the ear may be the result. This process, if not checked, may go on until we have mastoid disease.

Possibly acute articular rheumatism is the most frequent of all the sequelæ. The rheumatism may run its course in from seven to fourteen days, when the disease is likely to manifest itself in some other form, very often in endocarditis, localizing in the majority of cases in the mitral valves.

Pericarditis and endocarditis with myocarditis are the most fatal of all the sequelæ.

Pericarditis is one of the most serious of the diseases of childhood. As complete recovery seldom occurs; if they run a favorable course, adhesions between the layers of the pericardium are liable to occur.

Endocarditis.—Rheumatism is the chief cause of this disease in childhood which may result in valvular changes, or it may cause a cerebral embolism, producing hemiplegia.

Nose bleed is common, especially in cardiac diseases.

Chorea is another complication found in childhood.

Pneumococcic arthritis is a disease which may follow tonsilitis.

Pyelitis or pyelonephritis have tonsilitis as one of the causative agents. Repeated attacks of tonsilitis are liable to give the kidneys more to do in throwing off the poisons generated, and thus a kidney lesion is produced.

The most virulent case of pyelitis that I have ever seen was the result of an attack of tonsilitis.

Thyroid disease in many instances can be traced to direct infection from the tonsils.

Enteric diseases also can trace their origin to bacteria developed through a case of tonsilitis.

It seems to me in summing up tonsilitis and its sequelæ, we should be able to make some valuable deductions.

First. Tonsilitis is a most dangerous malady.

Second. This disease requires both careful and skillful treatment.

Third. It is a disease to be afraid of, therefore one to be avoided.

MEDICAL TREATMENT OF HYPERTROPHIED TONSILS.

BY

ANNA D. VARNER, M.D., WILKINSBURG, PA.

THE tonsils are masses of lymphoid tissue situated one on each side of the fauces between the anterior and posterior pillars of the soft palate. The mucous membrane of the pharynx is continued over this tissue dropping down into the orifices of the follicles of which there are from twelve to fifteen. Around each follicle is a layer of closed capsules imbedded in the sub-mucous tissue. They contain a thick greyish secretion. Surrounding each follicle is a plexus of lymphatic vessels. From these plexuses the lymphatic vessels pass to the deep cervical glands in the upper part of the neck. In tuberculosis of these cervical glands, the tonsils are frequently swollen and it has also been observed that inflammation of the tonsils frequently precedes or is associated with rheumatism—so physicians recognizing the direct connection between the plexus of lymphatic vessels in the tonsils and the cervical glands, have assumed that this is the open route from the exterior, whereby infection has taken place. Hence we find ourselves at the high tide of the sacrifice of the tonsils, not only for degeneration of their own tissue, but as a cure or prevention of other diseases.

The school physicians have added an impetus to this mad rush to knife every enlarged tonsil, by sometimes overstepping their authority, and have advised the course of treatment they

expect the parents to pursue. It is not the purpose of this paper to condemn all surgery of the tonsils but to point out the facts that an enlarged tonsil does not always indicate a diseased tonsil, that a simple inflammatory condition is frequently only temporary, that hypertrophy is associated with other derangements as a concomitant or a result, quite as often as a cause of disease, and finally, not only the enlarged tonsils but the associated or resultant conditions are amenable to treatment other than surgical.

In reviewing the literature on this subject, I was interested to find in one of our medical journals a report of a lecture delivered a few years ago before the throat department of the Massachusetts General Hospital by Geo. H. Wright, D.M.D., of the Harvard Medical and Dental Schools.

Dr. Wright presented a clinic of nineteen patients "all with enlarged tonsils corresponding to the second, third or fourth periods of tooth eruption. In no case was there excessive enlargement or suppuration. The tonsils were not removed but carious teeth were extracted, filled or cleaned. All of these tonsils returned to normal after the teeth were fully erupted.

"One boy eleven years of age whose tonsils had been removed three years before had come for treatment for glandular enlargement in the neck which corresponded to the third period of eruption of the teeth.

"Another boy of twelve had slightly enlarged tonsils removed during the eruptive period of the molars, and had a most serious post-operative hemorrhage."

Dr. Wright explains, "that in the enormous structural up-building—where nature is elaborating the materials for both teeth and the jaws, there is much waste tissue to be disposed of. There is a thick plate of alveolar bone and fibrous tissue to be absorbed before the tooth comes through. He shows the possibility of swelling of the sub-maxillary and lymphoid enlargements with accompanying pain, excessive salivation, feverishness, and occasionally a slight cough during the process. After the teeth have erupted the disturbance ceases.

"When the temporary teeth decay and abscess in such close proximity to the underlying membranes of the developing permanent teeth," he mentions the chances for infection "through continuity of tissue, particularly so when the temporary roots are in absorption," and possibility of infection in the subjacent

lymphoid glands even to the tonsils, with enlargement and even peritonsillar abscess.

He experimented with dogs, sealing Prussian blue in the pulp of their teeth and tracing the particles of blue through the pulp to lymphatic glands.

By dissections he found the tonsils in infants one week old the same size as any other gland in that region, but in six months the first period of teeth eruption the tonsils were twice to four times the size of any other gland. Hence he claims that tonsil enlargement without infection when adjacent to erupting teeth is a normal expression of the function of the gland, and when the gland becomes infected it is because of a lack of power of resistance to the invasion of micro-organisms.

His conclusions are: "That primary infection of normal tonsils is rare, and secondary infection through the lymph channels is the usual source.

"That tonsils may enlarge without infection at two years, six years, twelve years and seventeen years; and return to normal with complete eruption of the teeth.

"That diseased teeth are a prolific source of the infection of the tonsils."

This and other things being true, the treatment resolves itself into two parts—preventive and curative.

In the last twenty years, the practice of medicine has been undergoing a sort of a revolution. We are fast approaching the period when it will be the physician's chief aim to prevent diseases. This has been accomplished to a large degree in the acute infectious and contagious diseases.

The task that lies before us is the prevention of the sub-acute and chronic diseases. This can only be accomplished through correcting the manner and modes of living and the habits of men. This, of course, we can never hope perfectly to do. It is the perversity of man—that even though he be a physician—and knows it all—he continues to break every law of health in the decalogue.

But hypertrophied tonsils is one chronic condition that can be either wholly prevented or modified to a remarkable degree. If you have studied your cases particularly you realize that these children have not received a goodly heritage. They are strumous, anæmic, poorly nourished, have bad teeth or troubled with the eruption of the teeth or have a family history of tuberculosis or catarrh. Observation of these children from in-

fancy, the proper kind or amount of food, well ventilated sleeping rooms, fresh air schools if necessary, out-of-door living, care of the teeth, plus the indicated constitutional homœopathic remedy, and I grant you there will be neither adenoids nor enlarged, fibrous, punctated, filtrated, inflated tonsils to be cut out.

No child is going to take a disease acute, subacute or chronic, whose body is in first-class physical condition and I do not believe there is anything so potent to prevent the inherited tendencies of childhood and to increase the resistance against acute diseases as a properly selected homœopathic remedy.

Enlarged tonsils can be reduced to normal by good prescribing. A little patient was brought to me this summer whose tonsils and adenoids had been removed but her breathing was no better. She kept the whole family awake at night trying to force her breath through her nose. I prescribed tuberculinum 30, then 200, then 1 m. at intervals of two or three weeks followed with lycopodium in the same manner with fine results. Her breathing is normal.

If you find a tubercular taint in the family and the children have enlarged tonsils and adenoids start with tuberculinum. The remedy to follow will depend upon the symptoms, but if the child is obstinate, irritable, wakens in a bad humor, has dry coryza, difficult breathing and an obstructed nose at night, lycopodium will most certainly be indicated.

Baryta carb. and baryta iod. have a specific action on the glands of the throat. This remedy has aggravation from cold air or damp weather and amelioration from warmth. It is indicated in children who are slow, inapt, backward, and who take cold easily and whose tonsils are affected by every cold. Their memory is poor and they are shy in the presence of strangers.

Then there are the fat, flabby blonde children sweating easily about the head, with faulty bone development who will need calcarea-carb., or the thin, scrawny, debilitated, peevish, sickly children who will respond to calcarea phos.

And so we proceed to find some who will need sulphur, some silicia, some thuja, or mercury or hepar or guaiacum, all of which according to the experience of good prescribers have reduced large tonsils.

He was a wise man who wrote, "There is a time to weep and a time to laugh, a time to kill and a time to heal." That is good philosophy in medicine. In regard to the tonsils there is a time

to prescribe and a time to cut, and they never come in the same period. When the time to cut has arrived, the time to prescribe has passed, but if the prescribing be done in the right time, the time to wield the knife will never come. Of course, it is much slower work to reduce tonsils by medication and it is much more attractive to do a half hour's work, have a clear, clean throat and a fee in hand. But think of the nervous wrecks made by the surgeon's knife until men learned better than to do complete and radical ovariectomies. And listen to the whisper that even the Mayo's are learning that the last state of a patient minus a goitre is sometimes worse than the first. All tonsils are doomed now to go but the reaction is bound to come. Now and again we hear a man from Johns Hopkins or Harvard urging discrimination in selecting operative cases.

A descendant of one of the early settlers on Lake Chautauqua told me how his ancestors had cut down and burned acres upon acres of walnut timber which to-day would be worth many times the value of the land. The woodsman's axe was ruthless. It never spared. Today the hue and cry is "Conservation of our forests." We may well appeal also for the conservation of the human body. True the tonsils are rather insignificant organs, but it is inconceivable that the Great Architect should plan the tonsillar structure, with its crypts, its capsules, its plexuses in such close proximity to the lymphatic circulation chiefly for ulterior purposes. Every part of the body has its own peculiar and useful function and it is our duty to save every particle that can by any means be brought back to its normal condition. Just as a surgeon in case of a crushed foot decides to save the member if possible, so in disease of an organ our decision should always be to save if we can with safety to the patient.

Life can go on fairly comfortably well with the loss of this or that part or organ, but when so much as one jot or tittle has been subtracted from the human body it can never be a perfect organism again.

DISCUSSION ON PAPERS OF DR. JOHNSTON AND DR. VARNER.

DR. I. D. METZGER, Pittsburgh: I am very much pleased with this paper, because it is exhaustive and also not lacking in comparisons. There is no question that tonsillitis is a source of a good deal of trouble, because of the fad for removing tonsils. On the slightest provocation, these days, doctors think the

tonsils ought to come out. I believe that there should be definite reasons for removing them before undertaking this procedure. At times enlarged tonsils cause a low grade of chronic toxemia. We find minor sources of infection constantly pumping into the blood-stream these toxins; and the sooner we eliminate these, the sooner we fortify the body against the greater infections to which we are all subject.

The tonsil is a source of a good deal of infection, and one of the obscure sources. How shall we know when to remove the tonsil? In the first place, if it interferes with function, that is a good reason for doing so; if it is large, and interferes with swallowing and breathing. In the second place, if it is diseased, it should be removed.

The tonsil, as I said, should be removed, first, if it is interfering with function; and, secondly, if it is a source of infection. You can all tell whether it interferes with function. The respiratory and digestive tracts are interfered with. A bolus of food is taken into the mouth, and the child cannot masticate it; so the digestive tract is interfered with. It is easy to tell whether function is interfered with, and that is a point not usually considered. The school medical inspector merely says, you have enlarged tonsils, and they must come out. When I was in New York City several years ago, the children came in droves to have their tonsils removed, saying that the school inspector had said this must be done. "Do your parents know it?" was asked. "No," they replied. When the doctors protested and said that they should not be removed, the children said, "Well, if you do not do it, we will go up to the Manhattan and have them taken out."

The matter of infection is the hardest to decide. You cannot tell by merely looking at them that they are infective. A tonsil that is a source of infection need not be an enlarged tonsil. Some of the most dangerous tonsils, you can hardly see. They are the ones that need investigation. A constantly enlarged chain of cervical glands means something, and you must find out what it means in the individual case. If it occurs in the eruptive period, it may be due to the teeth, and probably so; but if it is caused by the tonsils and adenoids, I think that they should be removed.

DR. THOMAS L. BLACKLEDGE, New Brighton: It does one good to hear such papers as those to which we have just listened. We are inclined to think, as we sit here from day to day, from one session to another, that there is no person that has a part in these sessions who is not a specialist. That reminds me of the remark that one of my professors made, a number of years ago: that the medical profession was taking on such rapid

changes in getting into the hands of specialists that nothing was left to the general practitioner but about six inches around the neck. Such is not the case, however, judging from the papers of Dr. Johnston and Dr. Varner.

I have in mind a case in a girl of thirteen years, who is a member of a very intractable family. The mother thinks she knows it all, and can doctor her children through almost any ailment. The girl has been subject to attacks of tonsilitis ever since infancy. A year ago she developed a violent case of acute inflammatory rheumatism, followed by acute myocarditis, and now is in a distressing state of chorea. She has had no medical attention to speak of. I do not suppose that I saw her six times in all that period, and I know that she needed medical care.

These are some of the sequelæ that directly follow tonsilitis, and we cannot put too much stress on proper medical treatment of this condition. In our Beaver Valley, where we have so much smoke and fog, we have a great deal of diphtheria. A large part of my routine practice is given over to this kind of trouble. If you would listen to the papers on pharyngeal, laryngeal and aural trouble, you would think that that is all we do.

We cut out the results of these diseases, but, my dear fellow physicians, that does not end it. We have the same conditions afterwards—even worse, at times. We have the laryngeal, nasal and pharyngeal patients subject to acute conditions there after the adenoids have been removed.

We must learn to prescribe for these conditions. If you can get the cases under control from infancy on, and prescribe for them, as Dr. Varner says, you do not have to cut. They have less catarrhal trouble, if treated medically than if treated surgically. I have treated them both ways. If they see the physician early and follow the treatment through, they do not have severe obstruction.

Another thing on which argument seems to be running high in our locality is the question of the school inspector. Where I live we have an "Old School" man, who examines the children in the different districts. He has to report these cases to the Bureau of Health at Harrisburg. Dr. Dixon writes the parents a letter to have the children see their physician and surgeon, and have their tonsils and adenoids removed. The amusing part of it is that within the last year I have seen a great many families of children on whom I had operated in times past and removed their tonsils; but they still get the same letters and come back to me. It makes me smile. The inspectors look into the children's mouths, and feel that they must make a report.

One of the sequelæ that I hoped Dr. Johnston would refer to is that of acute glandular fever following tonsilitis. My experience has been that the amount of data in our textbooks on that subject is very limited. I think that I have only one book in my library that has a small chapter on acute glandular fever, yet this has been one of the most distressing things that I have had to treat as a sequel of tonsilitis. It runs a course of two or three weeks, and is accompanied with a great deal of danger. The symptoms of the disease are very violent. I have not heard very much discussion on the subject of acute glandular fever following tonsilitis, but should like to hear some. It requires careful attention and prescribing to bring the child through without any further complications.

DR. J. W. STITZELL, Holidaysburg: I want to congratulate Dr. Varner upon her paper. I think it has the proper ring. Not only physicians should read it, but the laity also. There is no question in my mind that removal of tonsils is becoming a fad.

In her paper, she made a quotation from a certain Harvard professor. This made me think of two cases that I had, in men of thirty-five and forty years of age, so far as I can remember. They both had typical peritonsillar abscess, or so-called quinsy. Both had carious teeth, and I attributed the condition to this. The teeth were removed later. I have never heard of two similar cases; but they followed so quickly, one after the other, that I could not help being impressed that this was the real cause of the enlarged tonsils and peritonsillar abscesses.

Another thing struck me in the paper, and that is the fact of the relation of eruption of the teeth to the size of the tonsils. I have no doubt that it is true that this has such an effect; and that if we should look into the matter carefully, we would be able to verify the statement more frequently. On the other hand, if you prescribe and reduce the tonsils during that time, they may be reduced, not by the remedy that you are giving, but by the natural force of the eruption of the teeth. Now, I believe thoroughly in homœopathic remedies. Anyone who knows me, knows that; and I do not believe that we need to resort at any time to any other means. I do think, however, that we should be careful not to be too enthusiastic in prescribing them. Some cases come to us with no symptoms at all. It is true that we have some dyscrasias, for which we can prescribe a constitutional remedy, but not with any accuracy.

Regarding removal of the tonsils, some times patients are referred to us by their physicians, but more frequently they come by the recommendation of Dr. Dixon, who does not see the patients. Medical inspectors are appointed, not for ability, but because they will do the work for almost nothing,—three

dollars in the town school, and five dollars in the country school. The country medical inspector looks over forty or fifty patients for five dollars, and has to look at them hastily. A man that is busy will not take the job. The result is that a lot of cases are reported that have no trouble at all.

Another thing to bear in mind is this: that in the removal of tonsils you must be very careful to perform tonsilectomy; because, if the patient happens to go to someone else he will blame you, and if the medical inspector sees a spot as big as a split pea he is huffy. I believe that there are cases in which you should discriminate, however, in deciding whether to perform tonsilectomy or tonsilotomy. We are often driven to do things that we do not want to do, because of fear for our reputations. You have to do things, at times, that you feel are not for the best interests of the patient. I do not see any way to get around that. Medical inspection of schools is a good thing, but it is in its infancy at the present time; and until the recommendations of Dr. Dixon are followed by proper inspection, we shall get the results we get now.

DR. J. M. HEIMBACH, Kane: Dr. Stitzell has brought out a very valuable point. There is too much dilly-dallying that does not amount to shucks.

While I wish to agree with what has been said by Dr. Metzger in regard to removing enlarged tonsils that interfere with function, I should like to ask, "How many cases of enlarged tonsils have you ever seen that did interfere with swallowing and respiration?" I have seen tonsils that practically filled up the throat, and yet there was no defect in swallowing or respiration whatever. The patients never gave a history of any disease in the throat, from childhood on. If they did not give a history of any throat trouble, had never had any sickness relating to their throats, did not breathe through their mouths, and had quiet sleep, why should their tonsils have been removed, no matter how much enlarged? I think the removal of such tonsils is absolutely senseless.

I do not say that because I am not a surgeon. I have done tonsilectomies and tonsilotomies; but I try to discriminate as to what should be removed, and what not. I have had people almost beg me to remove their tonsils and adenoids; and I have been driven to do it in some instances, I must confess. The patients or laymen have no business to judge as to whether they should be removed or not. It should be put up to the physician. That is what we are trained for. They ought to give us the opportunity to discriminate.

With regard to the specialist, I have nothing to say. He ought to know more than we do, because he has made the mat-

ter a study for years. Specialists get patients from other patients, and have opportunities for study that general practitioners do not have. I have spoken to some recognized specialists that have this opinion, or are getting to it fast: that we have no business to remove tonsils unless they are diseased. I am treating a patient with a very small tonsil, yet who has in her system a metastatic condition that does not respond to treatment. There may be another focus of infection in the body besides the tonsil. When I get home, I shall investigate thoroughly. The tonsil does not look exactly normal. The crypts are rather of an infective appearance, but there may be another source of infection. I am going to try to find out, when I go home.

I should like to have the question answered, whether any of you have seen a tonsil large enough to interfere with respiration and swallowing.

DR. FLEAGLE, answering Dr. Heimbach: I want to say that I have seen a number of enlarged tonsils that we had to remove for this reason.

DR. METZGER, answering Dr. Heimbach: It is the same with me, and that is why I made the assertion that tonsils that interfere with swallowing and respiration should be removed.

DR. HEIMBACH: I wish to add, "or enlarged adenoids?"

DR. METZGER: The adenoids are usually merely a part of the condition. You see the high vault in the mouth in practically all the cases. This is not alone due to adenoids. It means mouth breathing. The air will not go in at right angles. It describes a curve; and if there is any obstruction along the middle turbinate, it interferes with respiration more than if the obstruction were at the inferior turbinate, because of this curve.

If you watch these patients eat, you will see that they gulp things down. This is nearly always due to the fact that they cannot breathe well, which may be, in turn, due to the tonsils or to loss of some pharyngeal muscle. The palatopharyngeal muscles are the parts interfered with: and these two muscles will be crowded in the process of swallowing. Then you have a choking condition, because of the amount of food in the mouth. On account of the need of getting air, the patients get the food out of the way quickly.

DR. STITZELL: I have seen a number of cases of interference with breathing by reason of enlarged tonsils and adenoids. Watch them after night, particularly where the upper portion pushes up back of the palate. Try to give them an anaesthetic, and they make all kinds of noises and get blue in the face. Relaxation under an anesthetic is almost exactly like that under natural sleep.

I never remove adenoids unless I remove tonsils. Occasion-

ally the patients do not want the tonsils removed, because of interference with singing. In the application of the snare, you get a pretty deep removal, and occasionally find a case that might interfere with normal voice; but in these cases I remove the tonsils when I remove adenoids.

Any of you can prove the inability to swallow when the nasal passage is blocked up. By closing the nostrils and attempting to swallow, you will find that you cannot swallow more than a couple of times unless you breathe through the mouth. Try it. I have seen people get the same thing from nasal obstruction, particularly in nasal polyp. I have had patients come to me for the latter condition, and it was some time before they would have the polyp removed. They got irritation of the throat also, and could not eat. They could not swallow.

THE TREATMENT OF PUERPERAL INFECTION.

BY

NORMAN S. BETTS, M.D., PHILADELPHIA.

THERE is perhaps no important obstetrical condition concerning which there is greater diversity of opinion than in the treatment of the various types of puerperal infection.

The varying degree of virulence of infecting organisms, the frequency of mixed infections by several types of bacteria and the differences in individual susceptibility and resistance makes it difficult to accurately estimate the value of any particular form of treatment.

For the purpose of discussion the therapy of infection originating in the puerperal uterus or birth canal may be classified as follows:

1. To the uterus direct—with the object of destroying the bacteria, or lessening their infectivity.
2. General supportive measures, tending to increase the vital resistance of the patient.
3. The destruction of septic organisms circulating in the blood.
4. Intra-abdominal surgery.

It is in the field of local treatment to the uterus that the widest difference of opinion exists among authorities both in this country and abroad. The teaching of the most eminent ob-

stetricians has ranged from a policy of absolute non-interference to the most radical efforts to cleanse the cavity of the uterus by curettage, brushing, swabbing, douching, etc. Pincus has even advocated the use of live steam in septic abortions.

There is, however, an increasing sentiment toward conservatism at the present time, and we less often see the bad effects from the use of the sharp curet, or other undue interference in infections of the uterus.

The following is a fair description of the treatment of an average septic case in my hospital service:

A patient showing a rise in temperature above 100 degrees with corresponding acceleration of pulse is put upon liquid or low diet, the bowels are thoroughly moved, the indicated homœopathic remedy is prescribed and a careful physical examination is made, particularly of the breasts, throat, chest and abdomen. No internal examination is made at this time. If other than pelvic causes can be excluded, antiseptic vaginal douches at 115 degrees once or twice a day, are ordered, with perhaps an ice bag to the lower abdomen. Inquiry is particularly made for any alterations in the quantity, character or odor of the lochia, and if such are reported the case is immediately isolated under the care of a special nurse.

In the majority of cases, within 24 to 48 hours the temperature subsides, and the remainder of the puerperium is probably uneventful. The douches are usually continued even if symptoms are absent.

If, on the contrary, the patient is no better, or worse, at the end of 24 to 48 hours, with irregular temperature, chills, altered lochia and tenderness over the uterus, the further treatment will vary, depending upon certain indications. If the fundus is soft and drainage not very good, 1 c.c. of *ernutin*, or other preparation of *ergot*, is given hypodermically every other day. The pathologist is requested to make a blood culture. The records of the labor are carefully reviewed and the possibility of portions of the placenta remaining in the uterus are investigated by questioning the physician who conducted the third stage. We must remember that even a careful obstetrician may make the mistake of considering a placenta complete when a portion of a cotyledon is missing and remains attached to the uterus wall.

I attach considerable importance to the character of the

lochia. When it is increased in quantity and very foul, I feel more comfortable than when the discharge is checked or nearly absent and has little or no odor. As is well known, the most dangerous micro-organism, the streptococcus, causes little exudative reaction and leaves the uterine cavity macroscopically practically clean. It is well to remember, however, that most infections are mixed, and too much prognostic value must not be attached to the character of the lochia.

I have purposely omitted a discussion of the significance of cultures made from the lochia. Vaginal cultures are naturally of no diagnostic value, and those made from the uterus, by means of such apparatus as a Doderlein tube or Little's pipet are open to the suspicion of contamination, even with the best facilities. Moreover, since uterine infections are usually mixed, we can never be sure that growths obtained from one part of the uterine cavity represent the chief causative organism, unless confirmed by blood cultures.

If the pathologist reports a positive culture of streptococci from the blood and we are sure that the uterus is empty, this organ is left absolutely alone, except for an inspection of the cervix and vagina for ulcerating spots, which, if found, are touched up with Churchill's iodine.

The head of the patient's bed may be elevated and Murphy enteroclysis is started. Nourishing liquid food is pushed up to the limit of digestive tolerance and water is given freely by mouth. I never prescribe alcoholic beverages unless the patient has previously been decidedly addicted to alcohol.

The character of the streptococci grown from the blood, whether hemolytic or not, is of some prognostic importance, but it is well to remember that some strains of non-hemolytic streptococci may be very virulent.

If, however, the lochia is profuse and foul and particularly if the uterus is large and soft, even though the blood culture shows streptococci, the patient is anaesthetized and with the gloved hand the cavity of the uterus is *very gently* explored. I wish to put great emphasis upon the gentleness of this procedure. Do not forcibly squeeze the uterus, or force it roughly down upon the internal finger. The lymphatics and blood vessels of the myometrium are widely dilated and infection is readily spread by rough manipulations. The greatest care is used not to injure or break through the lining layers of the uterine cavity. If placental tissue is found, it is removed as

gently as possible with the finger. I scarcely ever use a curet of any sort, though a dull curet used gently under the guidance of the finger may be justifiable if placental fragments are very firmly adherent. The use of the sharp curet in uterine infections is nothing less than malpractice.

As soon as foreign tissue is removed, the uterus is washed out with two quarts of 50 per cent. alcohol to which one ounce of tincture of iodine is added. If the organ is not firmly contracted, *ernutin* is administered hypodermatically and the patient is returned to bed.

Placental forceps should be used only for pieces floating free in the uterine cavity—never if adherent to the wall.

Free drainage is one of the most important requisites in all infections—this must be constantly seen to. The bladder must not become over-filled and the bowels must receive attention. A firmly contracted uterus will drain better than a soft, flabby one and for the purpose of keeping up the uterine tone gentle massage of the fundus may be used instead of *ergot*. A well contracted uterus also tends to more successfully retard the passage of bacteria through the edematous lymph channels.

Hot douches (115 to 120 degrees) of one gallon each, given with a slow stream, seem to stimulate the pelvic circulation and hasten involution.

A. E. Wright has recommended citric acid or potassium citrate in doses of 30 grains in dilute solution every four hours to diminish the coagulability of the blood and thus produce a freer transudation of serum and more abundant lochial discharge, where this is scanty.

In uterine infections we are never justified in packing the uterus, except to control hemorrhage.

I am inclined to believe that the question whether we should ever invade the septic uterus after child birth may hinge to some extent upon the stage of the disease, in other words, the degree of invasion. If we have a case in which serious uterine symptoms have existed for a week or more, it is a question whether any mechanical local treatment may not do more harm than good, by spreading septic organisms through the uterus which is already sodden and infiltrated with bacteria.

We may say that the absolute contra-indications to intra-uterine manipulations are the presence of phlebitis, pelvic abscess, peritonitis, gonorrheal and pure streptococcic infections.

lymphatic septicemia and where it is positively known that the uterus contains no foreign fragments.

Under the head of general supportive measures are included the general conduct of a case which has already been described. Absolute mental and physical rest, fresh air, sunlight, and optimism are all helpful. Tepid sponges of the whole body should be ordered where the temperature is excessive. The baby is best taken from the breast as soon as symptoms are serious, for the milk is usually of poor quality and lactation and the trouble of nursing are drains upon the mother.

Do not forget the possibility of septic complications in other parts of the body, especially pneumonia. The lungs should be examined occasionally, especially where there are any chest symptoms, and the heart and kidneys carefully watched.

The treatment of puerperal infection by attempting to destroy the organisms and neutralize toxins by means of inunctions, and subcutaneous, intravenous or rectal injections of antiseptics, serums, vaccines, or substances to produce leucocytosis has been advocated in a multitude of ways.

Of the drugs recommended as systemic antiseptics, a colloidal salt of silver—collargol—introduced by Crede in 1895, achieved the greatest popularity. This is used by inunction, intravenously, or by injection per rectum. There is little evidence to show that the remedy is of any special benefit in the majority of cases and it has, I believe, been largely discarded.

Nuclein, in the form of sodium nucleinate, or protonuclein in doses of 5 to 10 gms. per day by mouth, or 2 drachms of a 2 per cent. solution hypodermatically twice daily will produce a definite leucocytosis, but the effect is but temporary and without much influence upon the disease, so that this remedy also is no longer extensively used.

The so-called "abscess of fixation," usually produced by injecting turpentine into the thigh, with the object of inducing leucocytosis was recommended by Fochier in 1892. We seldom hear of its use at present.

The introduction of the specific serums and vaccines offered the greatest hope of a universally useful systemic remedy for septicemia. Whenever possible I use an autogenous vaccine, often together with anti-streptococcic serum, but beneficial results which can be definitely attributed to the use of either are not sufficiently frequent to warrant great enthusiasm in their use. I am told by the bacteriologists that one of the essentials

for success with these remedies is in their administration very early in the disease. In some cases I have felt that the vaccine was beneficial, but so far, in my limited experience with the specific serum, results were not appreciable, though very large quantities have been used.

The employment of salvarsan in bacteremia seems worthy of trial, but I am unaware of any reports of its successful use in puerperal sepsis, and have had no personal experience with it.

SURGICAL TREATMENT.

My experience with abdominal operative interference in puerperal sepsis is nil. The two most frequently advocated operations are extirpation of the uterus and ligation of the pelvic veins to prevent the extension of thrombo-phlebitis.

The mortality following pan-hysterectomy varies in different clinics from 43 per cent. to 95 per cent. It is difficult to estimate at what period of the disease such a radical operation is justifiable and if left too late the procedure is of no value. Septic cases are notoriously bad subjects for anaesthesia and major surgery, and the risk of thus further jeopardizing the life of the patient would seem to more than counterbalance the slight chance of benefit. The operation has been advocated and performed almost entirely abroad. American obstetricians almost unanimously discredit it.

Pelvic vein ligation is an operative treatment which is still on probation.

Pelvic cellulitis should be treated conservatively until pus forms and points at an area where incision and drainage are easy.

In conclusion I would like to lay stress upon the following points:

It is safer and wiser to err on the side of conservatism and non-interference in the pelvis than a too radical treatment of puerperal infections.

Specific vaccines and serums, to be of value, must probably be given early in the disease.

The greatest gentleness must be exercised in all intra-uterine manipulations. Only gross masses of foreign tissue are to be removed and the uterine wall should never be scraped or unduly injured. It is as logical to curet an acute abscess elsewhere, or scrape out the lining of a diphtheretic throat, as to curet a uterus under such circumstances.

EDITORIAL

DRUG PROVING.

DURING the past two or three years there has been a notable interest in the subject of drug proving among the members of the homœopathic profession. Many physicians who have given a good deal of thought to this subject ascribe much of the progress that was made by the early adherents of homœopathy to their zeal for drug proving and they urge that it is incumbent upon the present generation of homœopaths to make some contribution along this line for the purpose of adding to general medical knowledge and at the same time of infusing new vigor into the homœopathic profession.

It seems to be a proposition universally acknowledged, that the study of drugs on the human body and their application to the sick, is the fundamental reason for the existence and perpetuation of the homœopathic school. If this be true, then it follows that the proving of new drugs or the more careful study of the older drugs, is a duty that is obligatory upon the homœopathic profession.

While the statement that drugs should be proved receives general endorsement, we find a great diversity of opinion as to how provings should be carried out. Some feel that in the new provings the subjective symptoms should be most carefully investigated for the reason that, as subjective symptoms are the first evidence of disturbed function in disease, so they give us the first indication of disturbed bodily function in connection with drug action. It is urged by those who would conduct proving along these lines that all provers should be carefully examined in accordance with modern methods of psychoanalysis in order that all individuals presenting hysterical manifestations should be eliminated from the test. It is also suggested that control experiments must be carried out with sterile water in order to establish the value of the symptoms elicited.

Another class of investigators contend that subjective symp-

tions should receive but scant consideration in a modern proving of a drug. In fact they contend that the investigations can be carried out practically as well on animals as on healthy human beings, as the objects they have in mind to determine are, chiefly the effects of drugs on the various types of bacteria and the structural alterations in the organs and tissues of the body that are brought about.

With the growth of human knowledge and with the development of the various specialties in medicine and in those sciences allied to medicine, it is but natural that those who have become proficient in certain departments of medical work should realize the necessity of drug investigation being carried out thoroughly from the standpoint of their particular specialty. Personally, we feel that investigations along all of the lines referred to above, are essential to a complete and thorough understanding of drug action. This of course involves the cooperation of a large number of workers in various fields and, the proving of the drug to-day is both a laborious and a time consuming matter. It can not be carried out successfully by men who are engaged most of the day in the practice of medicine and who are willing to give but an hour or so a week to the investigation. The employment of a corps of workers, with suitable groups of healthy human beings and an adequate supply of animals for the study of drug action, together with the equipment of laboratories, etc., would involve the expenditure of a large amount of money. Dr. Mellon has suggested that a fund of at least \$250,000 would be necessary for this purpose. We feel that at least double that amount would be required for the work if it were to be continued for any great length of time. Such a sum could readily be contributed by many of the wealthy adherents of homœopathy who from time to time give millions to endow institutions for medical research that are under the control of the "old school" and who devote their time chiefly to the questions that are of interest to that school. Very little will be gained by constantly rehashing the matter before medical societies and by blaming our colleges and students for the lack of drug proving. The work can only be advanced by those homœopathic physicians who are in a position to do so, securing the co-operation and financial support of wealthy adherents of homœopathy for the purpose of establishing and maintaining an institute for the purpose of drug study.

G. H. W.

AN INTERESTING CORROBORATION OF HOMŒOPATHIC PROVINGS OF STRAMONIUM.

DR. WILLIAM G. McNALLY of Chicago, has recently reported a case of accidental stramonium poisoning in which a large number of the symptoms that have been reported in the homœopathic provings of this remedy were developed to a marked degree.

A healthy boy, seven years of age swallowed about one hundred and twenty seeds of the stramonium plant, commonly known as the Jimson weed, about 5 o'clock in the evening. Seven hours later he complained of being alternately cold and feverish. Within a half an hour he became delirious, tossed about in his bed, wanted to walk around bare footed and kept pulling at the bed clothing. After one hour of this delirious condition he developed a comatose state and died shortly after 6 o'clock in the morning.

At the post-mortem examination a number of petechial spots were found over both lung surfaces and through all portions of the heart. The liver showed evidences of passive congestion and parenchymatous degeneration. The small intestine contained a thick, semi-fluid, yellowish material in considerable amount but otherwise no evidence of any gross lesion.

If one will take the trouble to consult Allen's Handbook of Materia Medica, he cannot but be impressed with the accuracy with which the symptoms that appeared in the above mentioned case of stramonium poisoning are recorded in the provings. There are times when we are inclined to become dissatisfied with the homœopathic materia medica, and feel that it comes far short of what it ought to be. A reasonable amount of dissatisfaction that leads to constructive efforts to improve our knowledge of drug action is to be commended, but unfortunately, much of the criticism is of a destructive rather than of a constructive character. With all its faults, the homœopathic materia medica represents the accumulated efforts of hundreds of earnest and accurate observers and undoubtedly constitutes the most complete record in all medical literature of the action of the drug substances upon the healthy human organism.

G. H. W.

STATE SOCIETY DEPARTMENT

EDITED BY RALPH BERNSTEIN, M.D.

WITH this issue of the *HAHNEMANNIAN MONTHLY*, the newly elected State Society Editor takes charge. He hopes to make the State Society Department a live issue. It is hoped that each month will show something from the pens of the President of the State Society and the various members of the Board of Trustees.

Your hearty co-operation is asked for in keeping the editor informed in matters of interest to the State Society at large. If you have anything to say, and you wish it published, by all means send it along and it will receive every consideration.

The secretaries of the County and Local Societies throughout the State are requested to place the editor's name on their mailing list so that he shall receive due notice of their meetings each month so proper publicity can be accorded them, not only in this State Journal but in the various Homœopathic Medical Journals throughout the United States which the editor represents.

A COMMUNICATION FROM THE PRESIDENT.

I have thought a good deal about the best interests of the State Society and there is no question what the future policy of all the Homœopathic physicians throughout the state should be. A more highly organized profession is most essential throughout the state and likewise throughout the United States.

It is the policy of the President to carry on organizing Local Societies wherever possible. I realize, after thoroughly investigating the localities where our physicians are practising, and in a good many instances, where they are so far separated that County Units are simply out of the question. The next best steps are District Units, which are feasible in some instances and in others the physicians are so far separated that it is hard to get them to attend meetings, especially where the Homœopathic principles are at rather low ebb.

It is my earnest desire to eliminate all selfish motives and work to the effect of getting everybody interested in the cause which we all love dearly.

I am rapidly getting my chairmen of the different Bureaus appointed. Some members are often somewhat slow in replying, which necessarily causes some delay, but I wish to thank many of the members who have responded with enthusiasm and are taking hold of the work in the same way. I wish to distribute these as far over the state as possible to arouse as much interest as possible.

The President will welcome any suggestions that might be offered in regard to any Local Units that wish to organize. I will be on the job and do my best to arouse interest and help in the organization. Everybody pull together and see what each member can put into the organization, rather than what they can get out of it. Plant the seed first and afterwards see what they can do by cultivating the sprout into a mature plant and we can all reap the fruit when fully ripe. We all should get more mellow as we advance in years; but to keep from rotting we have to exercise our gray matter by producing, do something that will boost the cause, each and every one of you, and you will feel better because you have done it. Any selfish act always makes you feel mean afterwards.

Later in the year, when I have fully gone over the ground and thoroughly investigated the best policies as far as Local Units are concerned, and their relation to the parent body; I will publish my views on the subject in the official organ so that everybody can think the matter over before our next meeting and be prepared to discuss ways and means to perfect the organization.

Let our motto be "Build Up" and everybody have a hand in the building and see what a momentum we can inaugurate.

Signed J. M. HEIMBACH, M.D.

TRUSTEES' MEETING.

A meeting of the Board of Trustees of the Homœopathic Medical Society, of the State of Pennsylvania was held at the residence of Dr. Ralph Bernstein, 37 So. 19th Street, Philadelphia, on the evening of Friday, October 15, 1915, at 5.30 o'clock, the President, Dr. B. F. Books in the chair. The following members of the Board of Trustees were present:

Drs. B. F. Books, Wm. B. Van Lennep, D. P. Maddux, L. T. Ashcraft, Wm. M. Hillegas, Wm. H. Hunsicker and G. Harlan Wells on behalf of the State Journal and Ralph Bernstein. At this meeting the chair was turned over to the newly elected President, Dr. J. M. Heimbach, of Kane, Pa., and Dr. Wm. Hunsicker, was elected secretary of the Board of Trustees. A vote of thanks was extended to Dr. B. Books for his most efficient service during his term of office and to Dr. Wm. M. Hillegas for his work as secretary of the Board of Trustees.

THE PHYSIOLOGY AND THERAPEUTICS OF THE CORPORA LUTEA.—The following very concise resume of the facts established by recent clinical and experimental investigations regarding the function and therapeutic action of corpora lutea is taken from *Therapeutic Notes*, 1915, xxii, p. 31.

The human ovary has an internal secretion. This internal secretion controls menstruation and maintains pregnancy during the early months.

The corpus luteum is the structure concerned and seemingly the source of the internal secretion.

The corpus luteum of pregnancy is more stable than that of ovulation.

The corpus luteum has a selective action on the endometrium and prepares the uterine mucosa for the reception of the ovum.

The development of the corpus luteum is synchronous with the onset of menstruation.

A relation exists between the corpus luteum and the other internal secretory structures of the body.

Removal of the corpus luteum causes cessation of the menstrual function.

Animal corpora lutea, when administered by the mouth in average doses, are nontoxic.

Those who have employed corpus luteum (the fresh yellow body) or a desiccated extract of it, using proper discretion, have found out that it is much more potent than gross ovarian preparations, and that its administration in suitable cases is followed by striking and gratifying results.

The particular conditions for which extracts of the corpus luteum will be found serviceable are:

- 1, Functional amenorrhea or scanty menstruation; 2, Dysmenorrhea of ovarian origin; 3, Manifestation of physiologic or artificial menopause, such as nervous or congestive disturbances of reflex origin (hot flashes, psychoneuroses, etc.); 4, Neurasthenic symptoms, during menstrual life; 5, Sterility not due to pyogenic infection or mechanical obstruction; 6, When the function of one ovary is impaired, or one ovary has been removed, and the compensatory activity of the other is insufficient; 7, Repeated abortions, not due to disease or mechanical factor; 8, Hyperemesis in the early months of pregnancy.—*American Medicine*.

GLEANINGS

GASTRIC HEADACHES.—There can be no doubt that headache is the most common form of pain suffered by human beings. It is, of course only a symptom and not a disease in itself. It arises from autointoxication which may be, or may not be, due to constipation, from eye-strain, from the excessive use of tobacco, in women with pelvic disorders, and it is a symptom which is fairly constant in some stage of nearly every infectious disease. In many instances the patient believes it to be due to gastric disorder, but in all probability most of these patients consider that it is gastric in origin because there is some nausea associated with the pain, and they believe this represents sick stomach; whereas, as a matter of fact, in most of these cases the trouble probably lies in a disordered function of the liver and possibly of the pancreas.

Cheney expresses the belief, in the *American Journal of the Medical Sciences* for May, 1915, that a fair proportion of cases are truly gastric. He admits that it is difficult to understand how disorder of the stomach can cause violent pain in the head, and that no adequate scientific explanation for it can really be given. He thinks that it is equally difficult to explain how constipation causes headache and why the pain disappears promptly after the lower bowel is emptied.

We agree with him in thinking that the gastric type of headache is difficult of explanation, but in that type due to constipation we are inclined to think that the use of a purge relieves the headache quite as much by changing the condition of the stomach and small intestine as it does by evacuating the large bowel, and that in this type of case the headache is often due to an autointoxication or to some disturbance of the circulation which we do not understand. He points out that gastric headaches are of variable duration and rarely last for twenty-four hours, and seems to think that they are characterized by being present in the morning and growing more intense as the day goes on, although he recognizes that there may be an evening onset and a morning relief. We are not inclined to agree with him in thinking that in these cases in which there is nausea and vomiting the trouble is alone gastric, but it is certainly true that in the majority of cases no disturbance of health is left after the attack.

One of the most remarkable things in connection with headaches arising from disorder of the alimentary tract is not only their severity, but the fact that persons who have organic disease, such as ulcer or carcinoma of the digestive tube, rarely suffer from headache even when the pathological lesion seriously disturbs function, as for example carcinoma of the pylorus causing the prolonged retention of food in the stomach. There is no definite localization of the pain in so-called gastric headache which enables us to determine the underlying causes, but in many instances there is

belching of gas or the bringing up of sour food in the mouth. In some instances an analysis of the gastric contents reveals hyperchlorhydria, and this is particularly apt to be present in patients who find they have developed headache on taking acid foods or drinks. In other instances there is a low grade gastric catarrh with hypochlorhydria. In some instances Cheney believes the primary condition is constipation, which induces gastric trouble, this in turn inducing headache, or it simply exists as a collateral symptom.

Undoubtedly the author of this article is correct when he states that no class of sufferer, from any sort of disease, is more grateful than the victim of chronic headache who finds himself at last freed from this annoying and incapacitating disturbance.—*Editorial—Therapeutic Gazette.*

SACROILIAC STRAIN.—Corley (*American Journal of Obstetrics*, April, 1915) states that the clinical pictures presented in cases of sacroiliac strain are not always clearly defined. Locally, pain in the back is the one symptom common to most cases. This may be so slight that its effect is largely shown in the disposition, as the patient is suffering from a continuous irritation, or it may so completely disable as to prevent getting out of bed. Beginning with a slight relaxation there is an increase of pain and disability as the arc of motion in the joint increases. In an incipient case there will be complaint following any movement requiring use of the lower spinal or sacral muscles, as a sitting posture, stooping, or any condition in which a relaxation occurs. Frequently patients will complain that on waking from sleep after a night's rest the lower part of the back aches, which can be relieved only by lying on the back, or by placing a pillow at the back, or by getting up and stretching or otherwise getting the joints in proper relation. Sleeping with too high a pillow or with no pillow may cause a strain producing the same condition. At other times, instead of giving relief, any attempt to change position on waking causes exquisite pain and at times complete inability to even make the attempt. This loss of power of movement is illustrated by a case. Referred pains are caused by irritation of the lumbosacral cord and consist of tiring, aching, and rigidity of certain muscles or groups of muscles receiving branches from the sacral plexus. These conditions are brought about both by a protective action on the part of the muscles and direct nerve irritation.

Objectively, symptoms of pain and tenderness can usually be elicited by deep pressure over the joint; movements of the joint; rocking or compressing the ilia; by flexing the leg with knee extended, while with the knee flexed no discomfort is felt.

Many pregnant women have symptoms which, while not severe, are yet sufficient to make them miserable. In fact, many of them have the idea that the pregnant state is attended by a certain amount of pain and discomfort which must be borne, and so bear in quiet rather severe pain from sacroiliac relaxation which could almost certainly be relieved by the medical attendant if he but knew of the condition and realized the efficacy of treatment.

Prognosis in so far as relief is concerned is good at all times. In cases occurring in nulliparous women and rendered acute at each menstrual period, and in cases occurring or continuing postpartum, a cure or

complete relief can usually be promised. In pregnant cases a cure need not be expected until after parturition. In all cases the general condition, station in life, and mental poise of patient must be carefully weighed, and due notice given that treatment does not always immediately relieve conditions, and that an absolute cure may not be effected for months or years, even though proper treatment be instituted.

Treatment consists primarily of fixation of the joints. Rest is of valuable assistance, yet, if rest alone is used, we will be chagrined to find our patient getting up from bed after a week or so of apparent recuperation only to find the symptoms returning immediately or shortly after assuming the erect posture. Massage over joints and muscles affected is of great assistance, as is also the application of heat.

The plan Corley had always worked upon and which has given uniformly beneficial results is first to apply a dressing of adhesive plaster. The adhesive plaster is torn into strips of about 2 inches in width and length to be determined by size of patient. It should be long enough to reach from just posterior to the anteroposterior median line about on a level with the iliac crest, downward across at a level of the great trochanter of the femur. It is important that the strips do not extend anterior to the anteroposterior median line for the reason that great discomfort is attendant upon the drawing action across the abdomen. In applying strips, the patient should be in the prone position on a flat, hard bed. Securely attach one end, either by having the patient place a hand on it or having an assistant hold it; then grasp its free end with the right hand, pulling forcibly, making counter-pressure with the left hand against the ilium, at the same time bringing the free end of plaster in contact with the skin. This is done alternately from side to side, each strip overlapping the preceding by one-half. When finished, we have a dressing spreading fan-wise on each side and converging over the sacroiliac joints. This fan-shape gives the greatest area of traction possible and holds the joints stiff, preventing the excess motion which is the cause of the disturbance. The uses of this dressing are threefold: First, it gives relief from pain and permits patient to go about; secondly, it acts in many of the cases of lesser severity as a curative agent; thirdly, it is a valuable diagnostic measure. On account of the irritability of the skin, in some cases, it is not practicable to renew this strapping. In others it may be renewed sufficiently to effect a cure.

When patient is relieved from pain and disability by such a dressing the diagnosis is clear, and arrangements should be made for a permanent dressing of one of the following sorts. The most common is the sacroiliac belt, made to measure of patient, 3 inches in width, either of sole leather lined with kid or of webbing, and worn round the hips midway between the iliac crests and great trochanters of femur, with perineal straps to keep the belt from riding up. A corset belt is sometimes used. In this dressing the belt is built on the lower edge of the corset, otherwise it is similar to the simple belt. A stockinet or elastic pair of trunks is sometimes used, and in some cases is all that is needed. In the more severe cases postpartum, a plaster-of-Paris dressing is sometimes used with great benefit. In any of the above dressings an auxiliary pad one or two inches thick conforming to the size and general shape of the sacrum is placed

inside the belt just over the sacrum. This acts by making pressure on the sacrum, forcing it forward into its proper position.—*Therapeutic Gazette*.

PHYSICAL EFFICIENCY AND WAR.—The extolers of war, Bernhardt and writers of the Prussian military caste, claim that military selection is of biological advantage to the race as a purifier by fire. This might be so if it were a case of the survival of the fittest, but it is not. On the contrary it is a matter of the survival of the most unfit. Only a part of the population is exposed to the risks of war, but this part is the best, considered from more than one standpoint. War's selection, as pointed out by Professor Vernon L. Kellogg (*Social Hygiene*, Dec., 1914), is exercised on an already selected portion of the population. And every death in war means the death of a man physically superior at least, to some other man retained in the civil population.

In these days, both in Continental Europe where conscription is the rule and in Great Britain where voluntary service holds sway, from 40 to 50 per cent. are rejected on account of undersize, physical or mental defects, or disease. In such a war as the one now being waged a large proportion of those fighting are so greatly injured or mutilated that they will never be able again to take up the ordinary vocations and duties of life, but to the end of their days will be more or less of a burden to the nation and the community.

War is a decided detriment to the race from another point of view. The selected men being the flower of the land, are naturally of the greatest sexual vigor and fecundity, and the loss or disablement of these cannot but have a maleficent effect on the future of the race. This has been proved beyond the shadow of a doubt by the results that followed the Napoleonic wars. From that period the physical efficiency and stature of the French people has decreased very markedly.

Again the constant invalidism of men broken down by injury or disease, to join the civil population is one of the most serious eugenic features of militarism. It is argued with some truth by German bureaucrats that the good effects of military service are many. It develops manhood in its compulsory exercises and enforced discipline and is a stimulus to patriotism and general self-control. Its obvious drawbacks however, more than counterbalance by far its redeeming virtues. As Kellogg aptly says, "when a man of character and ability gives his life in war, to his nation, he gives more than himself. He gives the long line the ever widening wedge of those who should be his descendants." In the long run these would have greater potential value than any particular political end he may have helped to accomplish. The most important and positive factor in human progress is good breeding. Race deterioration comes chiefly from its opposite—bad breeding. Militarism encourages bad breeding. The argument then that war is a biological necessity, is based on specious reasoning and false premises.

War has been weighed in the balance and certainly found wanting, and it may be said with the utmost emphasis that no scientific or sociological phrases can bolster up the weak case in its favor.—*American Medicine*.

VALUE OF MODERN FUNCTIONAL KIDNEY TESTS TO THE CLINICIAN.—Sondern (*American Journal of Obstetrics*, June, 1915) divides kidney tests into two general classes: First, those tests which are used to indicate prognosis in renal disease, namely, the phenolsulphonephthalein tests, and the amount of incoagulable nitrogen in the blood. Second, those tests which are intended for the early diagnosis of abnormal renal function and for the differentiation of the various types of nephritis, namely, the ability to excrete water, sodium chloride, lactose, and potassium iodide.

The phenolsulphonephthalein test was introduced by Geraghty and Rowntree and to a great extent superseded the other tests of this class as an indicator of renal functional ability. The technique is very simple and is as follows: 300 to 400 Cc. of water are given one-half hour before the test is made to insure free urinary secretion. After the lapse of the half-hour the bladder is completely emptied and, noting the time, 6 milligrammes of the drug are given subcutaneously or preferably intravenously. All urine secreted during the first two hours is collected and the contained phthalein estimated colorimetrically by a very simple and accurate method. The average excretion from normal persons in two hours is from 60 to 85 per cent of the amount administered. A large number of published reports agree with those of the originators, in the statement that the decreased excretion of the drug is in direct ratio to the severity of the renal insufficiency, but that disturbed function of the cardiovascular system with passive congestion of the kidneys shows tests indicating decidedly lowered functional ability of the kidney in the absence of any true renal lesion. As it is oftentimes difficult and sometimes impossible to decide to what extent cardiovascular fault influences the condition, the deficiency of this test becomes apparent. This for example makes the test by itself quite useless in pregnancy and other conditions accompanied by passive renal hyperemia.

The accurate determination of the amount of incoagulable nitrogen in the blood with the use of relatively little blood has recently been made possible by the colorimetric method devised by Folin and Dennis. This is by no means as simple a test as the foregoing and requires care and experience if accurate results are to be obtained. The average excretion by normal persons is variously stated by different investigators using the method advocated, and ranges between 22 and 40 milligrammes in 100 Cc. of blood. Here, again, the increased amount of incoagulable nitrogen in the blood is usually in direct ratio to the severity of the renal lesion. It has been shown, however, by Agnew and others that the cases of cardiovascular lesion and passive renal congestion show no abnormal amount of incoagulable nitrogen in the blood, and consequently this test combined with the phthalein test would seem to constitute as good a method as we have to determine prognosis, not only in renal disease but also in combined cardiovascular and renal cases. The detailed accounts of cases published by Agnew are particularly instructive in this connection, and it is this combination which has been found of special use in determining renal function in pregnancy when there is a coexisting passive congestion of the kidney.

Schlager and his followers have attempted to determine separately the function of the vascular or glomerular and the tubular apparatus of

the kidney with the idea of differential diagnosis. They claim that disease of the glomerular apparatus interferes with the excretion of water and lactose, and disease of tubular apparatus interferes with the excretion of sodium chloride and iodide of potash.

These tests are not difficult. The water test consists of an intake of about one liter, preferably early in the morning, in the form of weak tea, which is usually excreted in large part by normal kidneys within four hours. In diseased kidneys of the vascular type this water excretion is either deficient or abnormally great, indicating either inefficiency or abnormal sensitiveness of the glomerular apparatus, which is confirmed by the delayed excretion of lactose in both.

The lactose test consists in the intravenous introduction of 2 grammes of lactose, of which 60 to 80 per cent is recovered in the urine of normal persons within four hours, while in cases of vascular nephritis this excretion is delayed from eight to twelve hours.

The sodium chloride test consists in taking 10 grammes in capsules by mouth, which is excreted within twenty-four hours by normal persons, while in tubular nephritis this excretion is delayed from 80 to 100 hours. In serious cases this test is not devoid of danger.

The iodide of potash test consists in the administration of 0.5 gramme, which in normal persons is excreted in forty hours, while in cases of tubular nephritis the excretion is delayed for 80 to 100 hours.

By using these tests Schlayer claims the ability to distinguish the different types of acute and chronic nephritis: Acute or chronic vascular nephritis showing increased or diminished water excretion and delayed lactose excretion with normal chloride and iodide excretion. Tubular nephritis showing delayed chloride and iodide excretion with normal water and lactose excretion. Mixed cases frequently occur which will show different combinations of these reactions. Schlayer also claims to be able to determine slight functional faults by these means before clinical signs of a renal lesion are apparent.

While these methods for the differential diagnosis of the different types of nephritis are certainly ingenious and doubtless of use in many instances, the results obtained are often conflicting, and, while we must admire the progress made, the last word has by no means been spoken. While Schlayer's classification of nephritis into the vascular and the tubular variety has many anatomical and clinical points in its favor, and is appealing in its simplicity, there are also reasons why many do not feel justified in abandoning our older classification, and for this reason one cannot but feel that something still better may be devised. Refinements in diagnosis, such as have just been considered, in no way replace our older clinical and laboratory methods of diagnosis of renal and cardiovascular diseases: they are simply further aids, helpful in some instances, but confusing and probably inaccurate in others. The increasing tendency of some clinicians to rely exclusively on relatively untried modern laboratory methods of diagnosis at the expense of careful bedside observation is unfortunate, in that it is apt to discredit the laboratory worker anxious to render every possible aid. The fact remains that the careful bedside worker, who least needs laboratory aid in diagnosis is the very one who gets the most

help from it, for he learns to appreciate its limitations as well as its value.—*Therapeutic Gazette*.

THE PREVALENCE OF SYPHILIS IN THE ARMY AND IN CIVIL LIFE.—Syphilis is a disease which is, perhaps, more frequent in armies than in civil life. In the army, too, it can be studied under favorable circumstances and consequently Bulletin No. 3, issued from the office of the Surgeon General of the U. S. Army, compiled by Captain E. B. Vedder, of the medical corps, should prove especially instructive and interesting. Seeing that the Wassermann reaction has been used continuously as an aid to the diagnosis of syphilis in the army since 1909 with the result that much information has been obtained with regard to both the technique and the interpretation of the reaction, it occurred to the writer that it would be instructive to apply this test for the acquisition of the information as to the prevalence of syphilis in the army. A large number of medical officers have cooperated in the performance of this task and the outcome has been a quite remarkable resume of the subject. The subject was approached by studying groups, which may be classified as follows: (1) Those just entering the service. (2) Those who have been in the service some time. (3) Those who have recently left the service. In order to avoid fallacies inherent in the consideration of a small number of cases it was intended that each group should consist of 1,000 men. This was a convenient number large enough to avoid error, and not too large to become a matter of burdensome and useless accumulation of statistics. As a matter of fact, while 1,000 men was thus always the unit sought for, in a few cases more than a thousand men were obtained, while in other cases, for various reasons, 1,000 could not be obtained.

For the determination of the amount of syphilis in the groups studied, the Wassermann surveys have been chiefly depended on, although whenever possible these surveys have been reinforced by the clinical examination. The following conclusions were drawn from a consideration of the working of the Wassermann tests: (1) That antigens consisting of cholesterinized extracts of human heart do not give more false positives than any other antigens when used with the proper technique; (2) that the Wassermann reaction as it is performed in the army laboratory is sufficiently exact to give trustworthy results in survey work and that, therefore, the statistics presented in the bulletin may be considered reliable.

As for the prevalence of syphilis among men just entering the service, it seems fair to estimate that the percentage of the disease among the men originally presenting themselves to the recruiting officer is the same as the percentage found by the Wassermann survey on accepted recruits, plus the estimated 2.3 per cent. of rejections for syphilis. This makes a total of 19.07 per cent. of syphilis for all applicants for enlistment, or about one out of every five applicants. It may be therefore concluded that among the young men in civil life between the ages of twenty and thirty, and of the general class belonging to the occupations mentioned, the prevalence of syphilis may be estimated at at least 16.77 per cent., and there is good reason for believing that it is fully 20 per cent. The general opinion seems to be that there is a gradual and steadily increasing amount of syphilis in the army as the years of service increase, but a close analysis of the

figures demonstrates clearly that there is certainly no more syphilis among the enlisted men of the army than is to be found among recruits, and this in spite of the fact that a considerable amount of syphilis is undoubtedly contracted by these men during their period of service in the army. In fact, the investigations under discussion appear to show that so far as venereal diseases are concerned, conditions are better in the army than in civil life. A study of the tables collated, both for whites and blacks, indicates that age is the real factor governing the prevalence of syphilis and that service in the army has probably little to do with the prevalence of infections, except that to all intents and purposes they are not so numerous in the service as they would be outside.

The most important conclusions to be drawn from the work done in the army with regard to the prevalence of syphilis therein are briefly: (1) A very large number of recruits, estimated at 16.77 per cent., are already syphilitic when they enter the service. (2) Since there are only 3.44 per cent. of white enlisted men on the sick report for syphilis, it is certain that the majority of these syphilitic recruits are never diagnosed. (3) Many of these undiagnosed cases of syphilis are admitted to sick report under other diagnosis, and a certain but at present unknown amount of expense is thereby incurred by the Government. (4) From 2 to 5 per cent. of the commissioned personnel of the army are already infected with syphilis at the time they enter the service. (5) The percentage of syphilis among white enlisted men of the army, estimated at 16.08 per cent., is slightly lower than the estimated percentage of infected accepted recruits. (6) Since there are about 3 per cent. of fresh infections annually among these troops, it follows that syphilitics are leaving the service in some way faster than new cases are being acquired. (7) Study of the syphilitic registers of completed cases confirms this belief, because the rates for discharge for disability are twice as great for syphilitics as for all enlisted men. (8) Wassermann surveys of military pensioners, insane soldiers, tuberculous soldiers, and inmates of the Soldiers' Home also confirm this belief, because they all indicate a prevalence of syphilis considerably higher than that obtaining among enlisted men. (9) Syphilis is much more common among negro troops than white troops and is acquired at a much earlier age in the case of negroes, so that it may be expected that a very large percentage of colored men are already syphilitic at the time they enter the service. (10) The highest rate for syphilis encountered in these surveys is among the soldiers of the Porto Rico regiment of infantry. (11) About 13 per cent. of insanity in the service may be directly attributed to syphilis. (12) There is a distinct tendency in any group of men for syphilitic infections to accumulate with advancing years, so that the older the group the higher the percentage of syphilis. (13) The percentage of syphilitic infections is lower among men in the army than among similar men in civil life.

With reference to the civil population: (1) It may be estimated that about 20 per cent. of the young adult male population of the class from which the army is recruited are infected with syphilis. (2) It may be estimated that about 5 per cent. of the young men in college are syphilitic. (3) The study confirms observations that have been published already indicating that syphilis is so prevalent among negroes that it is possibly

the greatest single factor in the production of disability and high mortality rates among the race. (4) The high percentage of syphilis among Porto Rican soldiers indicates that syphilis may be one of the important causes of disability among native Porto Ricans. (5) Since syphilitic infection is so common, is productive of so much disability, and has so far entirely evaded sanitary control, it is believed that syphilis is a greater menace to public health than any other single infectious disease, not even excepting tuberculosis.

The conclusions arrived at by the U. S. Army investigators are extremely valuable and give occasion for thought. It is probable, indeed more than probable, that syphilis is the greatest menace to public health, and the problem of how best to abate the scourge—for it is hopeless to imagine that it can be entirely stamped out—should be grappled with more strenuously than it has been up to the present time. No sentiments of prudishness or of false delicacy should be allowed to stand in the way of the consummation of this object.—*Medical Record*.

REPORT ON THE ALLEN TREATMENT OF DIABETES.—In the *Boston Medical and Surgical Journal* of May 13, 1915, Hill and Sherrick state that their treatment of diabetes had been to start the patient off with a fairly high carbohydrate intake, about 100 grammes with 100 grammes of protein and 250 grammes of fat, or more, and gradually to work down from this, first cutting down the carbohydrate, and then, if the patient did not become sugar-free, cutting down the protein. The fat was always kept high, and many patients received over 4000 calories, the old idea being to make the patient gain weight if possible. If the patient lost weight they were afraid, and the writers believe that one of the most important things that Dr. Allen has brought out is that a diabetic can lose a good deal of weight with considerable advantage to himself and no harm. They also used "vegetable days" and "oatmeal days"—usually with rather poor results.

The writer's method of treatment, following Dr. Allen's very closely, is as follows: As soon as the patient enters the ward he is put on house diet without extra bread or potatoes, and kept on this for two days, to determine his tolerance for ordinary diet and the severity of his diabetes. On the third day he is put to bed and given nothing but black coffee with one ounce of whisky every two hours from 7 A.M. to 7 P.M.—7 ounces of whisky in all—representing about 800 calories. The whisky is usually well borne, although in one or two of the female cases it had to be omitted as it caused nausea. If there is much acidosis, as indicated by the amount of diacetic acid and acetone in the urine, soda bicarbonate is given, otherwise nothing.

The patient is kept on this regimen until he is sugar-free; in most of their cases it took either two and a half or three days to accomplish this. The loss of weight is very slight; the relief of symptoms, such as pruritus, polydipsia, etc., is very striking; and they have never seen any indication of acid poisoning in the cases they have treated by this method. On the whole, patients seem to bear starvation remarkably well. They have never starved a case longer than three days, but would not hesitate to do so if there is any sugar in the urine at the end of this time.

As soon as the patient is sugar-free he is given a "vegetable day"—i.e.,

vegetables containing not over 5 per cent of carbohydrates, boiled twice, with a carbohydrate content of about 15 grammes after boiling (in the boiling about half the carbohydrate is lost). After a single vegetable day the diet is changed to:

Carbohydrate	15 grammes.
Protein	25 grammes.
Fat	150 grammes.

From this the diet is slowly raised, increasing first the fat, then the protein, and lastly the carbohydrate. The fat is never raised above 200 grammes and the calories seldom above 2200. On this the patients hold their weight, feel well, and usually remain sugar-free. They do not gain weight; but as Dr. Allen says, it is much better to be lean and healthy than to be fat and carry one or two per cent of sugar. Indeed, in some of the more robust cases who are obese, it seems desirable to get rid of this fat, and the calories are kept low on this account. This is supported by Dr. Allen's experiments with his depancreatized dogs, for he found that as soon as he tried to make these dogs grow fat they died, whereas if he fed them on only a small amount, and was content to let them stay very lean, they did very well.

When the patient is discharged from the ward he is given written diet slips with two or three menus which he can use on different days, figured out carefully to correspond with his tolerance. The two most important things to remember are the following:

First, do not raise the diet too quickly after starvation, and pay just as much attention to the protein intake as to the carbohydrate.

Second, do not worry if the patient loses weight; it will not hurt him.

GASTRIC AND DUODENAL ULCER AND ITS NON-SURGICAL TREATMENT.—Sippy states that the principle involved in the treatment advocated consists essentially in efficiently shielding the ulcer from the corrosive effect of the gastric juice. This is accomplished by maintaining an accurate neutralization of all free hydrochloric acid, thus rendering the digestive action of the gastric juice inert from 7 A.M. until about 10.30 P.M., or during the entire time that food and the accompanying secretion are present in the stomach. In addition, it is accurately determined whether an excessive night secretion is present. If so, this is removed each night until the irritability of the gastric glands has subsided. This applies almost entirely to cases of duodenal and pyloric ulcer that have been associated with stagnation of food and secretion for one or two months, and longer. Such cases almost invariably are attended by a more or less copious continued secretion during the night, which should be removed by aspiration two or three times each night, if necessary. Usually after three or four days of accurate control of free acidity the excessive night secretion disappears. Subsequently the normal quantity (about 10 Cc.) of gastric juice present in the stomach during the night is left undisturbed.

Space makes it impossible to give the details of the management in this paper. Briefly stated, the patient remains in bed for from three to four weeks. Unless some serious complication is present, some or all of his regular work may be done at the end of four or five weeks. A wide

variety of soft and palatable foods may be given. The following plan of diet has been found most adaptable: Three ounces of a mixture of equal parts milk and cream are given every hour from 7 A.M. until 7 P.M. After two or three days soft eggs and well-cooked cereals are gradually added, until at the end of about ten days the patient is receiving approximately the following nourishment: 3 ounces of the milk and cream mixture every hour from 7 A.M. until 7 P.M. In addition, three soft eggs, one at a time, and 9 ounces of a cereal, 3 ounces at one feeding, may be given each day. The cereal is measured after it is prepared.

Cream soups of various kinds, vegetable purees, and other soft foods, may be substituted now and then, as desired. The total bulk at any one feeding while food is taken every hour should not exceed 6 ounces. Many of the feedings will not equal that quantity. The patient should be weighed. If desired, a sufficient quantity of food may be given to cause a gain of 2 or 3 pounds each week.

A large variety of soft and palatable foods may be used, such as jellies, marmalades, custards, creams, etc. The basis of the diet, however, should be milk, cream, eggs, cereals, and vegetable purees. Lean meat is not given during the period of accurate observation, since it interferes with the tests for occult blood in the stool and aspirated stomach contents.

The acidity is more easily controlled by feeding every hour and giving the alkalies midway between feedings. The acidity may, however, be controlled by feeding every two, three, or four hours. The writer has maintained complete control of the free hydrochloric acidity in several cases by feeding three times daily. In most cases, however, the plan of feeding every hour is best.

The practice of maintaining an absolutely accurate control of the free hydrochloric acidity during the entire time that food and the accompanying secretion are present in the stomach has become thoroughly established. This requires the administration of varying quantities of alkalies, corresponding to individual cases. Also, in addition to giving an alkaline powder midway between feedings, the powders are continued every half-hour after the last feeding until 10 p. m. In all cases of pyloric obstruction from duodenal and pyloric ulcer it has been found advisable to empty the stomach of all remaining food and secretion at about 10.30 P.M., thus removing the stimulus to an excessive night secretion. In most cases a short time after treatment is begun the stomach will be found empty at that time. The management of excessive night secretion has already been described.

Cases of stomach ulcer unassociated with stagnated food and secretions are usually controlled by feeding every hour and giving a powder containing 10 grains each of heavy calcined magnesia and sodium bicarbonate, alternating with a powder containing 10 grains of bismuth subcarbonate and 20 or 30 grains of sodium bicarbonate, midway between feedings. Cases of pyloric and duodenal ulcer that have been associated with stagnation of food and secretion longer than two months almost invariably require larger quantities of alkalies.

Heavy calcined magnesia has approximately four times the neutralizing power of sodium bicarbonate. Since its neutralizing effect is prolonged compared with that of sodium bicarbonate, and for other reasons, calcined

magnesia should be used between as many feedings as possible. An inextinguishable diarrhea usually prevents its exclusive use as a neutralizer.

The average length of time that a patient with peptic ulcer should be under the accurate control and observation of the physician is about four weeks. During this period, if observations have been carefully and intelligently conducted, the finer points essential to a complete diagnosis of peptic ulcer, including such conditions and complications that may extend the ulcer, will have been determined, and the patient will have learned how to manage himself accurately.—*Journal A.M.A.* May 15, 1915.

SIGNIFICANCE OF THE VON PIRQUET TEST.—Discussing this, T. Frazer (*Med. Rec.*, Jan. 9, 1915) says (1) that a positive cutaneous reaction is less frequent in children than it was once thought to be, the high percentage of reactions obtained being due to the application of the test chiefly to infected children of the poorer classes and (2) that therefore a positive reaction is of greater significance than it is commonly supposed to be. (3) That while there is an increasing percentage of reactions with years, and a corresponding decrease in the value of the reaction, the view usually held that the reaction has significance only during the first two or three years of life is not borne out by recent figures, and that we should be suspicious of a reaction occurring up to the age of ten. (4) That annual tests be instituted in the effort to detect early infection, and that, bearing in mind the fact that many if not most cases of clinical tuberculosis in later years are due to renewed activity of old foci, we should seek by proper means to prevent the development of "infection" into "disease." (5) That a negative reaction, negative or repetition of the test, is valuable evidence of the absence of tuberculosis unless the child be suffering with advanced or acute disease, especially measles.

IN DISCUSSING THE SUBJECT OF INTESTINAL PARASITIS IN CHILDREN.—(*Am. Jour. Dis. of Children*, Vol. 10—363) Gaston J. Greil B. S. M. D. Montgomery, Ala. Concludes as follows.

1. That parasitic infections in children are far more common than has heretofore been thought.
2. That while hookworm infection is the most often found, *Hymenolepis nana* and *Trichocephalus dispar* are by no means rare.
3. That less than 10 per cent. of the cases infected complain of symptoms referable to the infection.
4. That by routine examinations, many cases will be found otherwise unsuspected and by thorough treatment their general condition will be greatly improved.
5. Every county and municipality should appoint a physician for special work along his line, to follow the work done by the Rockefeller Hookworm Commission and under the direction of the state health officer, who should at frequent intervals examine the feces of every child in his district. No child should be permitted to attend a public or private school until through such an examination and the results prove to be negative.

VAN ALSTYNE H. CORNELL, M. D.

DIATHESIS IN INFANCY—Jerome S. Leopold M. D., N. Y. (*American Journal of Diseases of Children*, Vol. 10—288.) Cites a number of

cases illustrating the good results of the atropin treatment for the exudative diathesis in infancy—He says, that the eczema, bronchitis and asthma occurring in infants with other symptoms of exudative diathesis are occasionally very resistant to the ordinary methods of treatment. It is for these persistent and chronic cases that the atropin treatment is advocated. The atropin was used in a solution of one grain of atropin sulphate to 480 drops of water—Three drops of this solution were given on the first day of treatment, and if no untoward effects were observed the dose was increased 1 drop daily until patients received about 30 drops daily (equivalent to 1/16 grain of atropin sulphate.) This last dose was given daily for one or more weeks until the manifest signs of the exudative diathesis had disappeared—Smaller doses were then administered for a few more days or weeks—In no case was there any harmful result from the atropin treatment.

VAN ALSTYNE H. CORNELL, M. D.

ARTIFICIAL FOODS FOR BABIES.—In an article published in *Am. Jour. of Obs and Dis. of Women and Children* for May, 1915. Entitled "Best artificial food mixtures for hospital babies." Harry Lowenburg M. D. Phila. says that these babies lack mothering—There are too many babies assigned to one nurse. They do not get individual attention. Stock mixtures are generally prescribed. He believes in whole or skim-milk dilutions, but not to be used exclusively. Each case must be studied individually. He believes that the most successful feeder is the one that can most intelligently read the stools and correct the symptoms by manipulating his formula by any method he chooses, the simpler the better.

He has seen excellent results follow the use of buttermilk, flour and sugar mixtures in cases of fat and in protein intolerance. This method must not be continued too long without the addition of cream and the simultaneous exhibition of fruit or vegetables and of animal juices and the inunction of codliver oil.

VAN ALSTYNE H. CORNELL, M. D.

HISTOLOGIC FINDINGS AFTER SUCCESSFUL SCLEROSTOMY.—Up to the present only three eyes presenting a successful results after sclerostomy have come to microscopic examination. All three of these were removed after death. Verdoeff is now able to contribute the findings in a sclerostomized eye removed during life on account of a small sarcoma. Enucleation was performed seven and one-half weeks after the sclerostomy. A typical bleb was present at the site of operation. The sclerostomy wound was partly filled with extremely delicate connective tissue, containing in its meshes a few tumor cells. The connective tissue evidently originated from the tissue of the bleb, and was not covered by endothelium on its face surface. The scleral edges showed proliferation, thus reducing the size of the opening. The bleb was composed of a highly edematous connective tissue network. Its epithelium was thinner than that of the normal conjunctive. The edematous tissue of the bleb passed almost insensibly into the untraumatized conjunctival tissue. Contrary to his previously expressed views, Verdoeff now believes that the intraocular fluid escapes through the tissue space of the conjunctiva. In this case

gress of fluid was apparently only prevented in proximity to the line of conjunctival incision, when there was formation of fibrous tissue.—Dr. F. H. Verdoeff, Ar. of Ophthal.

WILLIAM SPENCER, M. D.

GLAUCOMA AND BLOOD PRESSURE.—The report of a series of experiments on the relation of intraocular pressure to blood pressure, and his conclusion therefrom. Twenty cases of primary glaucoma were examined as to their blood pressure as far as possible at the same time of day, and approximately at the same interval after food, and under similar psychologic conditions, seventy-one cases were examined as controls. Martins modification of Riva Rocci blood pressure apparatus was used, three estimations taken and the lowest reading tabulated. The intraocular tension was estimated with the schiotz tonometer. Arranging the figures in decades, the following results were obtained:

Period age	Glaucoma cases average blood pressure	Controls	Higher by Glaucoma	Lower by pressure
40—49	140 (6)	134 (21)	6 mm. Hg	
50—59	148 (4)	160 (29)		12 m.m.
60—69	154 (10)	159 (21)		5 m.m.

(Number of cases examined in parenthesis)

The author's figures, like those of Kramer and Kummell, are not uniformly either in favor of or against the theory that the average blood pressure in glaucoma is high. But while their figures tend on the whole to favor the theory, his, on the other hand, tend to oppose it; as at only one age period was the average blood pressure of the glaucomatous in his series higher than that of the control. In order to see whether it was possible to find clinically any confirmation in the human subject, of the relation between blood pressure and eye pressure which Henderson and Starling found in animals, the following experiments were performed:

The pressure of three young patients of an age at which the Riva Rocci may be assumed to give the genuine blood pressure were taken. They were then directed to take a short period of violent exercise—running up and down stairs—in order to cause a heightening of blood pressure. On their return the pressures were again taken. In each case the blood pressure was considerably heightened by exercise, but in only one case was there any heightening of the eye tension, and in a second experiment in this same patient, the opposite effect was produced. The experiments in no way indicate that the eye pressure in man alters with the blood pressure.

Considered along with the other points brought out in the paper, they suggest that an altogether exaggerated importance has been given to the blood pressure as a factor in maintaining or increasing eye tension. That it does help to maintain the eye tension no one will deny. But the eye tension may be affected in many ways which have no connection with, and no effect on blood pressure; and conversely the blood pressure may alter greatly without any corresponding effect on eye tension being observable. That blood pressure is of any importance at all in the causation of glaucoma is very doubtful. It is at the least likely that the solution of the long-standing problem of the etiology of that disease may prove to be a chemical one, with the well known phenomenon of osmosis as its base.—

Dr. Alex. MacRae. Ophthalmoscope.

WILLIAM SPENCER, M. D.

THE UTERUS IN RELATION TO HEMORRHAGES OF OVARIAN ORIGIN.—Lauth (Halle a. S.) has made a valuable contribution to our knowledge of the subject of uterine hemorrhages of ovarian origin by carefully examining a number of cases. The studies of a group of men among whom Hirschmann and Adler are often mentioned concerning the physiology of the endometrium, and the studies of the amount of fibrous tissue in the uterine wall as the cause of many cases of metrorrhagia, have seemed to indicate that the real cause is to be sought in the ovaries. Successive studies have pointed with increasing probability to these organs. Lauth has reviewed many of the considerations bearing upon this point and in addition has carefully examined a number of cases. His results show that in 8 cases of so-called metritic uterus there was no increase of the connective tissue as compared with muscular tissue. In 3 cases the musculature was hypertrophied, and in the remainder the increase of muscular and connective tissue excited in proportionate amount in the enlarged uteri. Only in two cases of actual metritis was the connective tissue increased as one evidence of inflammation in addition to the other evidences mainly round cell infiltration of the mucosa, myometrium and serosa and connective tissue organization in the serosa. Even in 5 cases was hypertrophy present in the mucosa. So that on the whole it is proper to speak of a hypertrophy of the uterus, whose cause the author refers to an increased or disturbed ovarian function, which in 6 cases was further suggested by small cystic degeneration. In such cases the uterus is so remarkably increased in size that it may be mistaken for a myoma. This has not received sufficient attention and is perhaps the explanation why the Freiburg conception of "metropoetia hemorrhagica" has not been more widely accepted. This term of course, characterizes one symptom but leaves unexplained the real course and cause of the disease.

Considering the results of annual experiments with ovarian extract and the analogy with myoma formation it will not be far wrong to regard the hemorrhage and the hypertrophy of the uterus as dependent upon excessive and perverted functional activity of the ovaries, especially as cystic degeneration of those organs are so often found. After farther discussion the author concedes there may be cases when its symptoms depend upon uterine changes, but in the cases examined the cause resided in the ovaries. The subject must be farther studied in order to properly distinguish the two forms. The author further suggests to eliminate the terms metritis, endometritis and metropoetia and in their stead to speak of ovarian metrorrhagia.—*Monatsschr. f. Geb. u. Gyn.* Vol. 62—36.

THEODORE J. GRAMM, M. D.

PERFORATION OF THE UTERUS IN ABORTION.—Schweitzer (Leipzig) admirably reviews this subject. He points out the distinct possibility of perforation of the uterus because of the change in consistency of the uterine muscle even without any histological alterations; consequently perforations may occur even without the use of force. The danger is enhanced in cystic male when the chorionic villi tend deeply to enter the muscularis. Any manipulations, therefore, upon the pregnant or puerperal uterus must be made with consideration for this fact of physiology. Instruments, not improper in themselves, but improperly directed have

often produced the lesion. The same is true of not only the introduction, but also the removal of laminaria tents and Hegans' dilators are often blamable. It is a fault of technique to attempt to introduce an instrument into an undilated cervix. The author condemns the use of the curette and insists upon digital guidance of all instruments, even when placental forceps are used to remove loose fragments. In view of the criminal character of many cases it is advisable for self protection to examine the case for the presence of perforation. Free dilatation should be effected and manual instead of instrumental removal is urgently advised. When the uterus is found to be perforated further efforts to empty it or irrigate the cavity must cease. The great danger is from septic peritonitis. Many cases of perforation by a sound or small curette have healed under expectant treatment, but the mortality is about 53 per cent., so that this treatment cannot be correct. The proper treatment is abdominal section whereby an opportunity is given to remove any fetal or placental fragments and to wash out the abdominal cavity. The question then arises whether to operate conservatively or radically. Those operators who favor the conservative method, cleanse the perforation, probably freshen the edges and place sutures carefully. Under this treatment of 29 cases five died. The radical treatment involves total extirpation, and of 45 cases so treated the mortality was nine. These figures require revision, if regarded in respect to the occurrence of peritonitis. Of 27 cases treated conservatively the mortality for peritonitis was 11 per cent; while of 36 cases radically operated the mortality from peritonitis was 2.8 per cent. The radical procedure is therefore to be preferred. The following considerations should guide in determining the treatment: the expectant treatment may only be adopted when the perforation is small, the uterus not infected, no injuries to the intestines and the uterus empty. When the perforation was made by a curette or other instrument, when other injuries cannot be excluded, and when suspicion of infection exists, laparotomy is required with total extirpation of the uterus. It may be sufficient to suture the uterus if the perforation is small in a non septic case.—*Monatsschr. f. Geb. u. Gyn.* Vol. 62—148.

THEODORE J. GRAMM, M. D.

EXTRA-UTERINE PREGNANCY.—Hoda (Strassburg) summarizes his article on extra-uterine pregnancy as follows: On account of the unrestrained growth of the trophoblasts the danger of hemorrhage by no means ceases after the death of the fetus. Not rarely does a serious hemorrhage into the peritoneal cavity take place from secondary tubal rupture. Neither is there any certainty that a haematocele which has remained unchanged for some time will not a month afterward be associated with a serious hemorrhage. The frequency of tubal abortion and rupture occur in the proportion of 1.8 to 1. While tubal rupture frequently leads to free hemorrhage, tubal abortion also causes both secondary and primary free bleeding. Hemorrhage threatening life as also recently occurring haematocele require immediate laparotomy, and the pregnant tube should be removed.—*Monatsschr. f. G. u. G.* Vol. 41—198.

THEODORE J. GRAMM, M.D.

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FIFTY-SECOND SESSION

CONIUM MACULATUM.

BY

AUG. KORNDORFER, M.D., PHILADELPHIA.

IN the latter half of the eighteenth century Storck and many of his followers recognized the importance of conium as a therapeutic agent, but their crude empirical methods led only to disappointment, its action proving uncertain and often injurious.

It was reserved for homœopathy, through systematic provings upon the healthy, to unfold a correct working knowledge of its wonderful curative powers.

Hahnemann included it among the antipsorics and looked upon it as an extremely valuable addition to our *materia medica*.

A careful review of its pathogenesis as given in his "Chronic Diseases" reveals many symptoms dependent, evidently, upon conditions affecting the internal secretions, a fact that adds confirmatory evidence as to the correctness of views advanced in a former essay upon the relation between the symptoms of hypo-

thyroidea with its accompanying hypoadrenia and the chronic systemic condition denominated by Hahnemann, psora—thus affording confirmatory proof of the correctness of Hahnemann's views.

The field of action of conium involves especially the nutritive functions, manifest in the general atrophic condition so commonly noted—but the nervous and glandular systems show the most marked local changes.

Useful as is conium in some forms of acute disease, it is a remedy pre-eminently suited to chronic diseased conditions characterized by atrophy and premature senile changes, in which conditions it bears comparison with such remedies as ambra, baryt. c., carb. an., iod., lycop., natr. m., sepia, silic. and sulph.

Hahnemann's pathogenesis, supported by more than eighty years' experience of his followers, shows the following symptoms and conditions to be of paramount importance.

Hypochondrial depression with indifference; nevertheless in tumors involving the mammae we usually find an apprehensive state of mind, a dread of malignancy of the growth. This is in harmony with the morose mood in which everything seems to impress the patient unpleasantly—and the anxiety as observed by Storck and Schmucker.

The indifference may be quite marked, the patient takes no interest in anything—disinclination for either business or study. Such persons also have an aversion to society, yet they dislike being alone (Ignat.) especially during the menses.

Memory is weak and there is an inability to sustain any mental effort.

Vertigo is frequently observed, especially when turning in bed, or when looking around; downward motion causes a sense of vertigo. In conium this modality is more likely to occur in conjunction with symptoms of premature senile changes in the heart. Borax has aggravation from downward motion but it occurs more commonly during infancy or early childhood.

Women, during the menopause often complain of headache, as if the head were too full (acon., bryon., lach.). Pain in the occiput with every pulse beat, as if pierced with a knife; or, shooting, or darting pains in the head. Falling out of the hair (compare ars., baryt. c., carb. an., graph., kreos., lach., lycop., silic.).

Though not often called for in diseased conditions of the

eyes, conium has marked weakness of sight, we have weakened accommodation and consequently a sluggish adaptation of the eyes to varied range of vision. (Gelsem. and nux vom. must not be overlooked in the more acute forms of this condition.)

We must also note aversion to light without any inflammatory symptoms. The symptom "objects look red" or "rainbow colored" has proved characteristic.

Cataract following a contusion.

Heaviness of the eyelids—can scarcely raise the eyelids, "they seem pressed down by a heavy weight"—(compare caust., chelid., ferr., gelsem., natr. sul., nux mos., nux vom.).

Smarting pain at the inner canthus, with lachrymation.

Itching pricking at the inner canthus, not relieved by rubbing.

A characteristic modality is aggravation from artificial light—this often points to conium in cases of students or others who suffer ill effects from excessive use of the eyes by artificial light.

Painful sensitiveness of hearing, noise startles one—often noticed in nervous women, otherwise good subjects for conium.

Accumulation of ear-wax, looking like chewed paper mixed with pus. Conium is seldom indicated in ear troubles except in chronic cases occurring in old people.

In asthmatic conditions, worse during wet weather and from slight exercise, especially when occurring in old, or prematurely senile patients it is especially useful. In such cases we have copious mucous expectoration with the cough.

In the bronchial catarrhs of old people for which conium is indicated, the cough is loose sounding, though often the mucus cannot be raised (arnic., caust., kali c., laches., sepia). We must note also chronic cough with enlargement of the bronchial glands—as well as a tormenting cough caused by a dry spot in the larynx, worse on lying down—all of which conditions occur in old or debilitated patients.

Stitches through the right chest above the nipple with each inspiration; or sharp thrusts directly through the chest from sternum to spine are very characteristic.

Weak heart in the aged—pulse one moment full and regular and the next soft and irregular.

Among the less definite symptoms, yet worthy of note, we must mention: loss of appetite; flatulent distention of the bowels after taking even a small quantity of milk (compare ars., cali c., cinch., cupr., nitr. ac., sepia, sulph.).

After eating, sour eructations or abundant empty eructations.

Nausea. Vomiting of black substances, looking like coffee grounds or of chocolate colored masses, sour and acrid.

Violent pains in the stomach, two or three hours after eating (*nux vom.*) but also at night.

Colicky pains with discharge of much flatus.

Emission of "cold feeling" flatus with rumbling and gurgling in the abdomen.

Heat in the rectum (not in the anus).

Burning in the rectum, during stool.

Stitches in the anus, independent of stool.

Trembling weakness after stool.

During micturition flow intermits, often occurs with enlarged and hard prostate—also at times in cases of hysteria.

Suppression of the menses.

Leucorrhœa acrid, burning; preceded by pains in the abdomen.

These and many other general and consequently less characteristic symptoms often complete an otherwise more or less obscure picture.

As already suggested the most important field of therapeutic use for conium is found in glandular affections, especially in glandular enlargements following contusions. The glands are intensely hard, "stony hard," is the common expression. It matters not what the location, whether parotids, lymphatics, mammae, testicles, ovaries, spleen or liver—the swelling and induration with stinging or lancinating pains, or, as occurs in some cases, simply an extremely painful sensitiveness to touch, point to the conium. In marasmus the hard and swollen mesenteric glands often call for this remedy.

Conium has been highly lauded in scirrhus of the mammae—and it surely has to its credit the removal of many scirrhus-like glandular enlargements though, as by reason of such non-surgical removal we have not been able to make a definite microscopic diagnosis, we cannot offer such proof.

About two years ago a case of mammary tumor in a patient who about three years before had one breast removed for a similar growth, and whose surgeon again urged operation, came under homœopathic care—after less than a year's treatment the tumor was entirely dissipated under the use of conium.

I have seen similar results in many such cases and, if neighboring lymphatics are not involved I always recommend a careful course of homœopathic treatment as preferable to the knife. Conium is frequently the indicated remedy, but usually must be continued for weeks before beneficial results become manifest.

The characteristic peculiarities are the extreme hardness of the tumor, the sense of weight of the part affected; the darting, stitching or lancinating pains; or, a painful sensitiveness of the swollen gland, worse before the menses; combined with the fact that the immediate causative factor has been a contusion.

Epithelioma of the lip, when consequent upon the pressure of the pipe, and characterized by burning and shooting pains in the lip and swelling and induration of the submaxillary glands should direct attention to the conium.

Petechia, occurring in elderly persons suffering from marked debility.

Blackish ulcers with bloody, fetid, ichorous discharge, also gangrene, following contusions.

I need not emphasize the importance of the constitutional characteristics in all cases, to assure satisfactory results.

Finally, we must not overlook the hysterical condition that calls for the use of conium. Such cases manifest much mental depression, tearfulness, sudden loss of strength, fainting fits, globus hystericus, swelling of the mammaræ which become hard and painful before the menses, dislike for society yet dreads being alone, in combination with many other general symptoms.

Conium patients appear to improve from wine, or other alcoholic stimulants, though persons susceptible to conium cannot, when in health, indulge in them.

Many symptoms appear while at rest, especially at night, and in periodical attacks. Symptoms are not relieved by sitting, yet patients desire to sit. Bad effects from suppressed sexual desire; as well as from excessive indulgence often call for conium.

Many less characteristic symptoms might be noted, but the foregoing will usually prove sufficient to guide to the choice.

DISCUSSION.

DR. RAYMER: My experience with conium has been limited, but I have had success with it in many cases in which there were glandular enlargements, particularly in a string of glands or lymphatics. I use it a great deal, also, in cases in which there is a tumor involving the mammary glands.

I want to say for conium, as well as lachesis, that I believe in the higher potencies. If you will permit me to go back to another subject, now that I am on the floor, I wish to refer briefly to a case that occurred not long ago, in which *crotalis* helped me out. It was a peculiar case.

Outside of my profession, I am connected with an institution to which I devote Tuesday evenings. One of my patients had been recommended to take turpentine for worms. One of his neighbors told him that he had worms, and had better take it; and he did so. A few hours afterwards, he had a hemorrhage from the bladder, which was intense. They brought him to my office; and, not finding me there, they went to an old school physician, who gave him some medicine. What it was, I do not know; but the result was that when he got home, he was almost in spasms from excessive pain. He felt that he could not stand it any longer; and his brother-in-law became so frightened that he came down and hunted me up. I was just going home. He said, "Doctor, we will have to have some medicine, or you will have to come over." I said, "I am too tired to go, but, what is the case?" He replied, "I think it is poisoning from turpentine." I prescribed *crotalus*, and asked him to report in the morning, if the patient was not better. He was better of the pain, but the hemorrhage was continuing, and was excessive. It always came following the urine, so I felt confident that the trouble was in the bladder; because the urine passed first was clear, and then the blood followed. I went there and examined the patient very carefully, and made up my mind that, in addition to the poisonous effect of the turpentine, he had another condition. I asked him some questions, and he said that he had always had trouble in checking hemorrhages. I concluded that *crotalus* would be likely to reach the condition, and gave it in the 12th potency. After the first dose he improved; and within twenty-four hours the hemorrhage had ceased and the bladder had come to a normal condition.

That is one of the characteristics of this drug; and I felt confident, before he had taken the first dose, that it would cure the case. I am a believer in homœopathy, and think that we are chasing too many rainbows. We are reaching out after things

that are not to be, when we have them right in our hands. I am not a scientific man, but a trained homœopathic doctor, who has learned the old style of prescribing, which I carry out in all my work.

DR. HEIMBACH: I have had very little experience with the remedy; but as the paper was being read, I thought of a case that bears out a little bit of the symptomatology mentioned. It was a case of tumor of the mammary gland, with pain just preceding, or probably on the first day of, the menstrual period. I gave her some conium, which stopped the pain for a number of months. After that it returned, and the conium had no effect. She was just getting up towards the menopause, and cancer was suggested to my mind as the probable cause. I advised removal of the tumor, to which she consented. I told her I wanted the privilege of removing the whole gland, if I considered it necessary, when removing the tumor. She agreed. I did the operation, found extirpation of the gland necessary, and removed it all. I could not find any axillary involvement, and took the tumor home. Instead of finding a malignant condition, I found the mamma atrophic, so far as my pathology would permit me to judge; but when I went to divide the little tumor in two, the growth proved to be a cyst, with nothing in it at all except clear fluid, which spurted up in my face. The pain had been due to intense distention of the breast by the cyst.

An interesting feature of the case was that although she had previously had considerable dysmenorrhea, she had none at all after the second period following the removal of the gland. What the cyst had to do with the menstrual function and the dysmenorrhea is a question. You know the intimate relationship of the nervous function between the two portions of the body, but it is hard to see how this would explain the dysmenorrhea.

DR. EDWARD KRUSEN, Norristown: I should like to say a few words with reference to the effect of conium on these breast tumors. One of our stumbling blocks is that after we cure a tumor with a remedy, we do not know what we have cured. We have no way of finding out whether we have cured a malignant growth or not. I have used conium for a good many years in the treatment of these breast tumors, along with *phytolacca* and *asterias rubens*, which is a good remedy to place alongside of conium in the treatment of these tumors.

Some years ago, a patient with a tumor of the right breast declared that she would not submit to an operation, and I prescribed conium. If you can get a patient to declare that she

will not be operated on, and to stand by that declaration, you will find that a great many of these breast tumors can be cured. Some cases I have had to stand by for several years in order to dissipate the growth, which seemed almost entirely to disappear, and then returned when something abnormal cropped up in the patient's life. That is not a cause for discouragement, if you can only make the patient believe it. We should keep the remedy ready, and keep the patients under its influence. I have seen some of them go two, and even three years, under treatment when eventually the lump completely disappeared.

This patient that I have referred to came to me a few years ago with a lump in the right breast. I prescribed for her, and her improvement began almost immediately. After a few months, the wife of another physician in my town said, "I am surprised that you gave up the doctor you used to have." "Well," my patient replied, "I had a tumor and they wanted to take it out. They said that they had done everything for me that was possible, and that the only thing left to be done was to amputate the breast. That I would not submit to, so I went to Dr. Krusen; and he has cured the tumor." "Well," the other lady said, "it could not have been a cancer." We do not know what it was, but there was a lump there and it was removed.

When these breast tumors are present, we have a very difficult problem to decide; and it is a question whether we can do better in the treatment of these tumors with our homœopathic remedies and the application of the X-rays, or by amputating the breast and removing all the glands possible. A little over three years ago I had five cases under treatment at the same time. Two of these were absolutely incurable and inoperable. These I was treating with the X-rays almost entirely. I could relieve the suffering and, I think, prolong life; but could promise no cure. Two of the five cases are now well. The two that I pronounced incurable, by the way, died.

There was one case in which there was a lump in the left breast, which was first noticed in September. In November, a second lump appeared along the chain of glands; and this was about the size of a filbert. On account of some opposition in the family to delaying operation, I consented to the procedure. While she was under treatment with the X-rays and conium, she gained in health, and there was no increase in the size of the growth; but she left about the first of January, and was operated on by Dr. Greenough, who is one of our authorities on breast tumors. The whole breast was removed, with the glands dissected from the axilla down the arm nearly to the el-

bow, and across the back to the scapula. The wound healed very nicely, with the assistance of a skin-graft. The operation gave an apparently good result. She was operated on in the Massachusetts General Hospital at Boston, and she came back with the cachexia that we have in the last stages of cancer. I think that she came from there probably about the first of April, and she died in August.

Now there was a case that we apparently had in good time. The larger growth was not so large as a guinea-egg; and the smaller was the size of a filbert. The patient's system, however, was so poisoned with the toxemia of the growths, or whatever you may call it, before there was any external manifestation of the disease, that no operation would alleviate her condition. I believe that if we had continued the homœopathic remedy with the X-rays, her life would have been prolonged at least a year; but when we get these cases, we have a very serious question to decide. I think that we can do a great deal if we stick to the homœopathic remedies; and *conium*, *asterias rubens* and *phytolacca*, I consider the three most important remedies, in the order named.

PATHOGNOMONIC REACTIVITY OF HOMŒOPATHIC REMEDIES.

BY

G. J. BERLINGHOF, M.D., SCRANTON, PA.

THE title of my paper is "Pathognomonic Reactivity of Homœopathic Remedies." For the benefit of those who may be unfamiliar with the term, I beg to explain that pathognomonic (meaning to know) is the name applied to a symptom characteristic and indicative of a particular disease—or one that distinguishes it from other similar diseases.

I have chosen this subject for the express purpose of emphasizing the great importance of making a correct diagnosis in the selection and curative applications of our reactory remedies, because of their specific action. For example, a pain in the chest—if properly diagnosed pleurisy—involves serous membrane—*bryonia* is indicated. Pain in the chest—muscle myalgia—*cimicf*. Pain in the chest—nerve neuritis—herpes zoster—*magnesia phosphate*, *spigelia*.

All drug substances of a poisonous or non-poisonous nature—chemical, vegetable, or animal product, entering the system through the different channels of the body to the degree of pro-

ducing increased or decreased functions of the various tissues and organs perceptible to conscious, sub-conscious, or unconscious mind, disturbing the harmony or destroying the normal process of economic efficiency of bodily resistance, must create and produce a constant changing and interchanging of the principles and approximate principles of the chemical elements. This change is most pronounced in the infinitesimal constituents of body cell substance, and intermolecular arrangements of the life producing chemical laboratory of nature.

The action of the drug upon special independent tissue structure so adjusted by natural physical laws of attraction and affinity according to the susceptibility or lack of susceptibility of the individual, is similar to the disease symptoms of the various toxins of microorganisms, when introduced into the body by natural or artificial causes.

This condition is productive of reactive changes induced by the fibrillary nerve reflexes of the drug as well as the toxins in which congestion and inflammation prevail—the forces of nature's defense.

The entrenched forces of lipoid and protoplasm under such influence must and do to some extent suffer defeat, and pathological changes occur, which, if reaction fails, result in disintegration and death.

There is a close similarity or relationship in pharmacological provings. I must admit, and because of this, we should understand the pathogenesis of the drug selected to obtain reactivity. The methods lately instigated by our school are the expression of intelligent manifestation, and give determined details of every symptom designated by the tissues involved.

The latest advanced and most completely supported theory of offensive and defensive processes of the body against disease, is that of Ehrlich, known as the "side chain" theory, in which the interaction of the various antigens and antibodies are explained.

Antigens are considered as disease producing substances, while the specific substances produced by the cells to neutralize and render the antigens innocuous are termed antibodies.

The antigens are usually proteid in matter, the product of animal or vegetable cells which, when introduced into the body, have the property of stimulating the production by the body cells of a specific substance or antibody, which unite chemically with it, and then neutralize it. Antigens may be of various

types; namely, the soluble products of bacterial growths, substances bound up in the bodies of the bacteria themselves or protein and extracts of animal tissues, etc. These different forms of antigens produce corresponding types of antibodies which differ in their methods of attacking the antigens. Antibodies specifically produced as distinguished from those naturally existing in the normal animal, are called immune bodies, and the animal is said to be immune to the particular antigen in question.

The theory explains the conception of the action of the indicated remedy when given under such conditions. I may be entirely wrong; especially when he says that poisons of a composition such as alkaloids, glucosides, etc., when introduced into the body do not produce antibodies, and differ essentially from the true antigen because closely related to food stuff and have no relation with the body cells which provide special receptors for them. He says that the poisons having no special *chemical affinity* are not closely bound to the cell substance, but become physically stored up and many of those substances are eliminated from the body. Then he says further, it is of greatest importance to realize that the interaction between antigens and antibodies is of a chemical nature, and he does not consider or attempt to explain the action of the whole or potentized drug, given under homœopathic indication.

In some instances it is known with what cell elements the drug reacts. For example, in the case of carbon monoxide in the blood cells, it is the hemoglobin which enters into the chemical reaction. The cytotoxic action of oxalic acid has led to the recognition of important calcium salt changes in the body. But of the alkaloids, no positive knowledge of reactive constituents of protoplasmic substance is recognized.

Is it then not possible when a drug acting and producing these symptoms is brought in contact with tissue that is affected by toxic substance of disease, can and does by some process, yet unknown, offer or contribute by its physico-chemical property and through potential assimilation give, supply, or exchange some chemical or organic substance of a neutralizing component in which the pathological matter may resolve itself in establishing some form of stimulating medium characteristic of the various forms, and possibly of the same nature as antibodies. Or is the reaction brought about by aggravation of the pathological condition by the action of the drug upon the

neuroplastic cell reflexes, and allowing nature to call upon and exercise her pent up and fortified reserve forces—and thereby increase the function of her intramolecular, so-called antibody, defenses?

Therefore, have we not the right to say that when a drug is selected according to pathogeny, it has a specific action upon not only the totality of subjective and objective symptoms obtainable, but upon the whole interactivity of the enire body function involved by disease, and especially the obscure—and as yet little understood—intracellular protoplasmic substances?

SCIENCE OR LAZINESS IN THERAPEUTICS.

BY

S. ANSON HILL, M.D., GREENSBURG, PA.

MORE than three years ago our beloved Dr. Z. T. Miller, speaking of the enthusiasm over bacterial vaccines, made the prediction that soon all our medical colleges and hospitals would be transformed into vast breweries for bugs. Since that time we have probably proven the real value of bacterial products in the treatment of disease and are not fearful now that they will replace all other known methods of therapeutics.

Contrary to your expectations, this is not to be a discourse on bacterial toxins and their relation to homœopathy. I am sure that broad-minded physicians use them when they deem it necessary. But they present an apt illustration of the mushroom popularity of many factors which compose our armamentarium in therapeutics.

In diagnosis we have learned the value of urinalyses, blood counts, blood pressure, the X-ray, the cystoscope, and the countless instruments which assist us in the accuracy of our determinations. In surgery no labor has been spared, genius has been untiring in the perfection of instruments and methods which make for certain, sure, and happy results. But when the diagnosis has been made and the possibility of benefit to the patient from surgery has been eliminated, then what? Dietetics? It has been placed on a reasonably scientific basis. Physical therapeutics? Again we are sure of our grounds. But medical therapeutics? I see the older heads shaking sadly. Of course this is where the schools split, and I dare say that in

this audience we can find all types of therapeutists, from the drug nihilist to the CCM. high potentists, a long jump.

No, I can't solve the problem: I do not possess the superhuman knowledge which will bring the schools together and cause all medical humanity to agree on one method of drug therapeutics. But, speaking to a homœopathic society, may I not ask the question, Why are we not making more certain the principles that we stand for?—the principles of homœopathy? In this age where the constant demand is for efficiency and progress, can we exist if we sit complacently at our desks and rest content with what has been done by Hahnemann, Hering, and a few others? When our progressive brethren announce in glowing terms the value of emetine hydrochloride, and of their new-found anemonin, is it sufficient for us to say, "Oh, Homœopathy has been using ipecac and pulsatilla for years in the treatment of those conditions."

Of course we have our Hering laboratory, but of what value has it been so far to homœopathy throughout the country? It has been in existence for five years, and many homœopaths have not seen a single official report from it. But I do not intend to censure the Hering laboratory. We are told that it is doing good work. Neither do I ask that every homœopath be a drug prover. What I do ask is that every physician claiming to be a member of our school will use homœopathy where homœopathy is indicated.

I am not going to attempt to define the limits and indications of homœopathy. That, of course, is a matter for individual judgment founded on a careful study of its principles. But I do desire to call to your attention one growing habit that should be branded as a menace to the health, progress, and dignity of the entire profession, and especially of homœopathy. This habit is presented to the practitioner by the smooth-tongued salesman of the homœopathic pharmacies in this manner:

"Doctor, here is a preparation that is very successful and very popular at this time of the year. It is called our asthma tablet and is very successful. I have sold thousands of them on this trip, and doctors are ordering them by the ten thousand lots." Naturally the doctor is curious—he reads the label—"Ipecac, 3x; spongia, 3x; kali. mur., 3x; veratrum vir., 1x; gel-semium, 2x." Did you ever try to read printers' pi? It's all the same thing. The combination tablet is even worse than

printers' pi. No one pays any attention to a mixture of jumbled type, but the physician partially believes the salesman; then he reads the list of symptoms that go with the jumble of remedies, the same list of symptoms that sell a bottle of patent medicine anywhere, and finding some symptoms that fit some of his patients, buys a few thousand of the tablets and becomes a pill peddler in truth. The beauty of this method of therapeutics is that all of the combinations and their number is legion, ranging all the way from a complexion tablet to a spleen tablet, are labeled with the names of the conditions they are supposed to cure; if the doctor is not at home his wife or his children can dispense the medicine and heal the sick just as well.

Of course the physicians who attend this society are too well educated, too proficient mentally to use combination tablets, and so it is difficult for you to understand how convincing are the arguments used by the salesmen in their efforts to make a sale. One of them had the nerve to tell me that a Pittsburgh homœopath, well known as a high potentist, had given an order for ten thousand such tablets, and I knew only too well that the physician referred to would not only consider them rank poison, but an insult to his intelligence.

The old-time shot-gun prescriptions have been the butt of ridicule for years—in fact have practically been ridiculed out of existence. And the new shot-gun compressed tablet, called homœopathic and believed to be homœopathic because the ingredients are marked 1x, 2x, or 3x, deserves the same fate. They must be sold to physicians and prescribed by physicians or they would not be manufactured. Are we scientific therapeutists if we use them? You will all agree that those who try this golden road to a successful practice are merely lazy charlatans. Then why not wipe out this ridiculous libel on homœopathy and preserve for our school the reputation of using only those methods which are rational and scientific?

ALCOHOLISM.

BY

C. SPENCER KINNEY, M.D., EASTON, PA.

[Presented at the Interstate Federation of Homœopathic Medical Societies, Elmira, N. Y., Thursday, Nov. 11, 1915.]

THE study of alcoholism is one that interests every practitioner of medicine. About the subject, much confusion exists,

depending upon the viewpoint the person discussing it may take. From the viewpoint of the philanthropist, who may be a prohibitionist as well, the inebriate comes very close to being a criminal on account of his degrading habit which seems to continue and increase without any desire on his part to stop, and the victim constantly becoming more degraded. Heredity has been blamed for it, but this is not justifiable, from the statistics regarding the matter. When it comes to the class of those who naturally and easily fall into the habit of taking liquor to excess, we find it is the so-called good fellow. There are a good many people in this world, who, whenever they hear a person spoken of as a good fellow, unhesitatingly form the opinion that he is addicted to drink. Conviviality without drinking is to many an impossible situation, and the man who does not drink and who attempts to be a good fellow, filled with kind impulses and anxious to be entertaining, is in a peculiar position, for many people cannot enjoy an evening and have the convivial element in it without drinking, not necessarily to excess, but still with that degree of freedom which each may desire; intelligently or otherwise.

Insurance companies recognize that an ounce and a half of alcohol which is equivalent to eight ounces of whiskey or brandy, may safely be taken by the average healthy man for years without detriment, so far as an insurance risk is concerned. While this may be done in many instances, yet the persistent use of alcohol, is bound to decrease the individual's will-power, judgment, and capacity for continued mental effort, and it also has a very numbing action on the moral faculties.

One of the beliefs that a chronic drinker frequently acquires, is that of jealousy toward some object of his affections; if married, toward his wife, whom he distrusts without cause. Just how this belief may have had its origin it is difficult to say, because the causes are not always uniform, and herein comes the study of that personal equation which in every case of alcoholism must be considered, in order to understand the reason why and wherefore the condition exists. With some it is the natural weakness of will which cannot say no, where education and environment have had their influence. Ignorance of the danger that comes from drinking probably enters into a very large percentage of those who form the habit. Men and women are not likely to indulge knowingly in a habit which will rob them of all opportunity to make a success of their undertakings and will wreck their lives.

The subject of prevention in matters of drink habit is not understood by the parents and it is not guarded against in schools or colleges. To my mind, one of the greatest weaknesses in our literary colleges is the absence of inquiry regarding the habit forming characteristics that may take place during the college course. Education should embrace the knowledge of the care of one's self, and make the most of the mental and physical attainments with which one is endowed by birth and early training. Too many times a young fellow going to college with restraint removed and a naturally convivial nature, becomes addicted to intemperate habits. There is a glamor about drinking that attracts anyone with a lively disposition and an active imagination. There are some who believe the following that was written by the late Robert Ingersoll, and in the feeling that they are enjoying themselves, will live up to what this suggests:

"I send you some of the most wonderful whiskey that ever drove the skeleton from a feast or painted landscapes in the brain of man. It is the mingled souls of wheat and corn. In it you will find the sunshine and the shadow that chased each other over the billowy fields; the breath of June; the carol of the lark; the dews of night; the wealth of summer and autumn's rich content, all golden with imprisoned light. Drink it and you hear the voices of men and maidens singing the harvest home, mingled with the laughter of children. Drink and you will feel within your blood, the starlit dawns, the dreamy, tawny dusks of many perfect days. For forty years this liquid joy has been within the happy staves of oak longing to touch the lips of man."

But it must be recollected, that we have no account of any sustained intellectual effort along the lines of poetry, literature, business enterprise, or anything with its origin in the higher impulses of man's nature that had its direct incentive from the use of liquor. We have heard of men who could not write, who could not speak, unless they were drunk, but these belong to old women's tales, and should have no credence given them.

In the proportion that liquor stimulates the imagination, it also enfeebles reason and judgment. We are in the habit of speaking of liquor as a stimulant, but investigations that have been exhaustively carried on in Europe, especially by Emil Kraepelin who is professor of psychiatry in the University of Munich, disprove this idea. He came to the conclusion that

alcohol is not a stimulant, but a depressant, and as such is to be considered. He found that where students were put to work calculated to test their memory, judgment, and manual dexterity, that their powers were lessened after taking alcohol, even after a previous drill had been given; that is, at first they were exercised without the use of alcohol, and then after a week of this they were given small doses of alcohol and although they had had the experience of the week before, yet they failed to make as good a showing. This was especially so in the test of marksmanship which was made by Lieutenant Boy, of Sweden. It is said that he tried his pupils on accurate firing, quick firing, and endurance without alcohol, and then again after forty gram doses. These records were circulated throughout Europe, for it showed a marked lower efficiency after each moderate dose had been taken.

We have every reason to believe that a child is the product of the mental and physical conditions of the parent at the instant of conception, and here statistics bear out the authority of the Bible, in fact that nine months after the celebration of the carnival in February, and of the vintage in October, Switzerland has more defective children than at any other period of the year.

Probably medicine would not be much the loser, were intoxicants never used in the treatment of the sick. There are, however, times when whiskey can be used to advantage, as in the treatment of the aged, and perhaps with a diminished vigor of mind and body, alcohol may be absolutely homœopathic in its application. On the other hand, there is hardly any physical condition that may not be aggravated by the use of alcohol. Whether the patient is a steady drinker or a periodical, depends largely upon his personality. It is safe to say that no person who is not of a neurotic diathesis will drink liquor to excess any more than he would run any other habit to extremes. Many take liquor daily and have never been known to be under the influence of it nor has it noticeably interfered with the performance of their usual avocations. These are the exceptions, but it simply shows what good health and plenty of exercise may allow an individual to do. When a neurotic diathesis exists, habits are easily formed. In some direction a habit will assert itself as soon as any strain, fancied or real, gives the neurotic subject an excuse for seeking help to carry him through the difficulty. Probably the most dangerous condition that a

drinker falls into, is an attack of delirium tremens. This does not arise from any single drinking bout, but only after a prolonged period of drinking in which there is a marked disturbance of nearly every function in the body, characterized by an inability to retain food, disturbance of digestion throughout, marked constipation, tremulousness of all voluntary muscles, and a toxemic state that soon becomes a serious menace to the comfort of the patient as well as anxiety to those about him, accompanied with delusions, visual and auditory hallucinations. For a good many years the death rate was quite high in the treatment of delirium tremens, when whiskey, opium, morphine, or hydrate of chloral were generally used. What is now done for a case of delirium tremens, is to promote elimination by every means possible. Saline cathartic, hot water enemas every six hours, (if necessary use the long rectal tube), hot bath twice daily, plenty of milk, fresh air, and the best of nursing. Since the employment of this treatment, many lives have been saved, and I cannot speak too highly of it. When you consider the careless indifference that characterizes a steady drinker, and the possibility of his storing up poison from the wretched liquor that he has constantly taken, the importance of a quick and successful elimination of this poison offers the most reasonable chance for this man's health.

There is another class that is not often seen, but which I have met a number of times, the study of which is very interesting. Papers from time to time have contained accounts of people who have lost the recognition of their identity to the extent that their names and relationship to society are forgotten. This condition of mind can come from traumatism, shock, long-continued anxiety and alcoholism. When this condition manifests itself in an individual, he absolutely forgets for the time being, all connections that he has held in life heretofore. What he may do, where he may go, or how long this condition may exist is a question that no one can answer.

From the medico-legal point of view, this mental condition is unfortunate, because there is something so very untangible about it, and one in which a shrewd, designing and forceful personality might possibly deceive for a time at least, almost anyone who examines him, and thus be shielded from the penalty of the criminal act. It has been my fortune to see the transition between these amnesic states and their normal status. Often the change brings about a mental situation that is most

striking. To have a man who is acquainted with you in one state suddenly change to another in which you are an absolute stranger, and all this done in less than ten seconds, cannot but strike one with wonder. The possibility of this amnesic state occurring in a man of marked neurotic disposition must not be overlooked. While it is an unusual condition, yet I believe its occurrence is more frequent than we are aware. Should an individual commit any overt act in this trance-like state, he is entitled to have it given as a defence for his act, as he cannot consciously guard against this condition, unless he has experienced them before and has been told how and in what way they had their origin. But recognize that this state of mind may not depend on alcoholism alone, but mental shock, traumatism, or long-continued strain which may culminate in this peculiar mental state. Efforts are being made among the best students of our time, to find out everything possible regarding alcoholism, and the effect of its use. One of the best pamphlets that has been gotten out is by Dr. S. S. Goldwater, the commissioner of health for New York City, from which I quote:

"A diminution in the consumption of alcohol by the community, according to those who are in a position to know and to judge, would mean less tuberculosis, less poverty, less dependency, and less pressure on our hospitals, asylums, and jails. Intemperate drinking cuts into the support of the family. The drinking of parents weakens the vitality of children. Drinking mothers lose twice as many babies as do sober mothers. More alcoholism is found in the parents of feeble-minded children than in the parents of normal children. The children of drinkers develop more slowly and do poorer school work than do the children of abstainers. Alcohol impairs the tone of the muscles, lessens the product of laborers, depreciates the skill and endurance of artisans, impairs memory, multiplies industrial accidents, causes chronic disease of the heart, liver, stomach, and kidneys, increases the death rate from pneumonia, and lessens natural immunity to infectious diseases."

For over thirty years I have made a special study of the treatment of inebriety, and after all these years which have passed, I cannot foretell with any degree of certainty the result of any special treatment given to an individual for this habit. There are some who will take the treatment under protest, come out of it grateful in the highest degree, with a determination founded upon the hardest of common sense, that they will

in the future let liquor alone; abide by this decision and have no further difficulty with it. There are others who will take the treatment willingly and come out with the exalted idea of never again touching alcohol under any circumstances. They resume their old associations, and it is only a question of time before they fall back into their old habits. Living in an atmosphere where the moral tone is necessarily low, is no place to maintain exalted ideas of one's duties in life. On the other hand, I have undertaken to treat a man who had never been known to have a sober day for eight years, as he drank daily, frequently to excess. He was wretched in the extreme. As an object of degradation he was a model as such for the town. I gave him treatment, feeling that it was a waste of time, medicine and money. He made a good recovery, cleared up so that the change was not a reformation, it was a rejuvenation. He went to work at his trade, dressed well, kept away from his old haunts, put money in the bank, and for years was a self-respecting man, and so far as I know, is yet.

If a man wants to let liquor alone; is not too demented to realize the necessity for the trial, and has will-power enough left, this can be done; but if he has become demented and lacking in moral sense to the extent that he does not appreciate or recognize the obligation that he owes to himself and society, his will-power is likely to be also enfeebled, but little can be done for him. I simply speak of these cases as hinting at the uncertainty of results. There is no physical weakness which the patient may possess, but that may offer some excuse for his drinking. The treatments that have been in vogue during the last thirty years have been found among these drugs:

Strychnin, atropin, chlorite of gold, apomorphia, cocoa, cinchona, capsicum, nux, and xanthoxylum.

They have been used singly and combined, and all of them are worthy of use. When it comes to a given case, individualization is to be considered, and bodily elimination is to be carried on after every drug used. Exercise within the limits of their strength, and hot baths when restless, followed by a brisk rub are measures to be employed.

The environment in which a case of alcoholism should be placed for treatment is of very great importance. In the first place, such a patient should be away from home among strangers, where it would be expected to exert that degree of will-power, right and proper for him to exercise. At home he

would impose on those around him which would be to his disadvantage. He should not have the associations confronting him that he had while drinking. He should avoid associating with those who have no desire to stop drinking and cut out the talk of his former experience with drink. There is a lack of self-respect, dignity, honor, lessened memory, and perverted moral sense in a drunkard difficult to remedy. The greatest help to a user of alcohol is the recognition of his condition and a conscientious, earnest desire to get well and to leave liquor alone. This is not going to be an easy matter, because he must work for it; work hard and steadily. There is this thing also to consider: Any weakness that he may have, any experience that he may pass through, having in it an element of shock, whether of pain or pleasure; any physical discomfort, will lead one who is an habitual drinker, automatically to take a drink, to offset some fleeting expression either of discomfort or joy. What specific treatment for this habit will accomplish is along the lines of placing the patient in thoroughly good physical condition with a capacity for intelligently understanding what he has passed through and the degradation that he has incidentally incurred. With desire for liquor gone, it gives a man whose will-power, as I have said, has not become too enfeebled, or his mind too demented, the ability henceforth to let liquor alone and live a valued life.

SOWING AND REAPING, OR CAUSE AND EFFECT IN SANITATION.

BY

E. G. WHINNA, M.D., PHILADELPHIA.

Philadelphia Bureau of Health, read before the Medical Inspectors' Association, November 4, 1915.

SANITARY science, known also under the names of preventive medicine, State medicine, hygiene and public health, has been defined as an application of the laws of physiology and general pathology to the maintenance of the health and life of communities, and to the prevention of the transmission of the so-called infectious and contagious maladies.

All great movements for the betterment of mankind, if vigorously pushed at the psychological moment, secure an impetus which carries them to successful issue.

It requires neither a prophet nor the son of a prophet, to rec-

ognize the fact that we of the present age are standing on the threshold of a new era in medicine. It is a time of enlarged possibilities and new demands on the profession in which we live and move and have our being.

While in the past the physician was, as it were, a private citizen, the conception of his sphere and work has been greatly enlarged. Formerly his dealings were with his patients as individuals, having practically no consideration for society as a whole. With the growing complexity of society, however, with the present multitudinous interrelations and mutual interdependence of the members of society, this attitude must needs be modified, if we would realize the largest possibilities of our calling. No longer can we treat our patients without reference to the claims of society at large. For not rarely does it happen that our duty to the public may many times outweigh our seeming duty to the patient. Hence we have established quarantine regulations. Hence we shall some day be required to report the venereal diseases, as has so long been necessary with other and less destructive contagions.

The world is learning that the demands of no single individual shall be allowed to transcend the welfare of the many, and we shall be compelled to act in accordance with this truth. We are rapidly coming to a realization of the great value of medical supervision of the community, rather than of the isolated individual and the application of means of prevention, rather than of cure. I am sorry to say that the greatest hindrance to such work as this comes from the people most to be benefited. There seems to be an antagonistic mental attitude in a large part of every community to the idea of any kind of supervision which shall even advise them as to the conduct of their daily lives. It is because of the existence of this class of people, together with the great influx of an ignorant foreign population, that makes the creation of efficient boards of medical supervision a necessity in every community, city and state.

Public health work in the past has been in a large part closely connected with the medical profession, and this is very properly so, for in matters of health the people expect physicians to show them the way. There is a growing tendency to look upon the doctor as an advisor in everything that concerns the health of the individual or the community. Many newspapers now employ physicians in an editorial capacity to give their readers free advice regarding the "burning questions of the

day," ranging from the destruction of the typhoid fly to the best way of enlarging the female breast.

Progressive civilization has issued a new decree and by reason of our relationship as physicians we must be able to use our powers to exercise a tremendous influence and what we say to people on health matters, what we advise them regarding the prolongation of life, through the prevention of disease, will be kindly received and seriously weighed.

Sanitary science has always been classed as a dry and unimportant subject, but the day has come when we cannot longer ignore it, for it is rapidly coming to occupy the foremost rank in medicine. That disease in some of its varied forms, has been a decisive factor in retarding the progress of the human race, there can be no doubt. You will agree with me that any discovery which reduces sickness and suffering and gives to man a longer life and greater happiness is of value to humanity. Benjamin Franklin was once asked: "What is the value of a discovery?" His reply was: "What is the value of a baby? It may grow into something."

Medicine with its vaccines, bacterins, antitoxins, etc., is rapidly forging ahead and will soon leave surgery far behind; but general medicine is being outstripped by its youngest child, preventive medicine. Witness the victories over diphtheria, smallpox and tetanus, meningitis, rabies and cretinism, or the more recent success in the prevention of malaria, yellow fever and typhoid fever by the United States Army Medical Corps. Consider what has already been accomplished in the lowering of infant mortality and in the fight against tuberculosis—and the work is but begun.

How insignificant is ordinary medical and surgical practice when we think of the work in preventive medicine done by Drs. Stiles, Reed, Strong, Gorgas, Pasteur, Creel and many others.

The broadening science of sanitation calls for men of sound fundamental education, men of imagination, men of force. I believe we are standing on the shore of a sea of unlimited knowledge, gazing into the deep future of unexplored truth. From this vast ocean let us reflect the increasing radiance of that sanitation that is to be. Our search for so-called specific methods reminds me of the knight who spent most of his life in search of the Holy Grail, only to find it in the possession of a beggar at his own doorstep, whom he had passed when starting on his mission. The prevention of disease and the promo-

tion of health have passed beyond the boundaries of the medical profession. A new type of health officer is rapidly coming to the front, a new career is opening for young men. Dr. Wm. H. Welch, of Johns Hopkins Medical School, says: "Of all the departments of a city, that of health is one where partisan politics has the least right to be. It is the one where those who are put in charge of the department and its divisions, should receive their appointment on the basis of special qualifications. Our medical schools do not supply this training. We should strive to have in medical schools a department for training men to serve subsequently as health officers. On the one hand, the Health Board and those who have appointed them, do not know where to look for such trained sanitarians, and, on the other hand, what incentive is there for a young man to fit himself for this career in sanitary work unless he has a chance of appointment to the health department?" M. J. Rosenau, of Boston, says: "It may surprise some to learn that hygiene is included as a major subject in the curriculum of only three medical schools in this country, the University of Pennsylvania, the University of Michigan, and Harvard. The teaching of hygiene is becoming increasingly difficult owing to the widening of the subject, and it has been necessary to establish special schools for the training of hygienic experts for health officers. Sanitation and hygiene has become a separate profession. Typical of this new spirit, is the recently established school for health officers, in Boston, Mass., a co-operation between Harvard University and the Massachusetts Institute of Technology; where instruction is given in quarantining against the infectious diseases, fumigation and the care of fomites, the legal rights of the physician and the individual under quarantine laws; smallpox vaccination—how best performed; typhoid prophylactic vaccination and why it should be promoted; disposal of household wastes in city and country; plans for sewage disposal in country communities, and the problem of the "carrier" in such diseases as typhoid fever, diphtheria and scarlet fever. It is significant that the administrative board of this new school is composed of a doctor of medicine, a doctor of science, and a civil engineer.

The work of the sanitary official can only attain its greatest efficiency as the individuals of a community co-operate with him. The most difficult obstacle encountered by all health authorities is the carelessness of the public toward disease. If

the medical profession could reach every serious case of illness, especially contagion, in its incipency, and could place the patient under proper nursing or attention, there is little doubt that the period of disability could be reduced very materially.

But the habitual attitude of the average person is to wait until symptoms have far advanced before calling in the doctor. It is a false economy, but until the process of public education shall change the public attitude, it is likely to continue. The people have yet to learn that prevention is the best cure. When life was simple, when each household to a great extent lived to itself, individual responsibility was not so great; but now with the greater interdependence of modern life, avenues of exchange for infection have eminently increased. The baker, the barber, the groceryman, the milk supply, the water supply, the street car, the railroad train, the theatre, moving picture halls, schools, both week day and Sunday, common drinking cups, towels and combs are a few of the countless ways in which disease may be spread from one to the many.

Infectious diseases nourished by ignorance, indifference or the greed of our fellow-men, lurk about us at our places of residence and business and pursue us in our pleasures. The individual, however wise and careful he may be, is not always able to protect himself and family from the sanitary sins of others. The elimination of disease is a warfare in which each individual must do his part; for every infection some one is responsible.

Sanitary laws and regulations are a necessity in preventing disease and they should be of sufficient scope to cover all sources of danger and so practical as to be capable of being enforced. It is clearly evident, then, that general regulations for preventing disease, must be made and administered by boards of health; as they alone are given the authority to enforce such measures. It will be remembered that the French Government failed to build the Panama Canal and that our own Government spent two years at a tremendous cost of life and money, with but little progress. At last the sanitary problem was taken under serious consideration, and with the proper control of malaria, yellow fever and other tropical diseases, the work has gone on to uninterrupted completion. The eradication of danger in the Canal Zone and the reduction of contagious and infectious diseases in the United States by strict observance of sanitary regulations prove that cleanliness brings the

inevitable result. We are often appalled at the ravages of the bubonic plague in the Orient, and deplore the ignorance of the people, who make but little if any effort to remove the conditions making possible such terrible destruction of human life. The frequent epidemics of cholera in Russia, speedily bring forth our righteous indignation against the despotic government which permits conditions to exist that make such epidemics of suffering and death inevitable. It is seldom, however, that we call to mind the fact that typhoid fever in the United States claims more deaths and entails more economic loss than cholera and bubonic plague combined in the countries above mentioned. Have you ever stopped to think of the devastation worked by this plague, which, as F. C. Walsh says in the *Technical World*, with "the silent legions of death rides through our land unnoticed?" Over three hundred thousand people are stricken with typhoid fever annually, and more than thirty-five thousand lives are needlessly sacrificed; an annual economic loss of three hundred million dollars. Compared with this record, yellow fever, cholera and bubonic plague sink into insignificance. In the United States, all the time, there are three million people seriously sick from preventable causes. Not a minute passes which does not witness at least one death from preventable disease. A short time ago we were all shocked and horrified by the wreck of the Titanic and the great loss of life that it caused and yet more lives are lost every day of the year from preventable diseases than went down to death in the Titanic; and the more pitiable because preceded by weeks, months, and often years of weary suffering, a wanton sacrifice every year upon the altar of ignorance and apathy of over six hundred thousand victims. As an economic consideration alone, these figures are alarming, for from a monetary point of view, it is estimated that the preventable loss to the people of our country through sickness and death, is two billion dollars every year, or about twice the gross annual income of the Federal Government.

When we think of the six hundred thousand lives lost every year from preventable diseases, that could be saved if these diseases were properly understood and controlled, it should arouse everyone of us to work for the immediate establishment of a department of health by our National Government, whose business and duty it should be to adopt proper measures for stamping out these diseases and saving these lives to join in the great procession of our country's progress and happiness.

The guardianship of the public health is an obligation of such great importance, that the personnel of the sanitary department should be the most highly competent men available and they should be paid accordingly. With few exceptions the country over, the compensation given in these positions is ridiculously inadequate to command the services of the most competent men and to justify those who accept these positions, in continuing in them long enough to acquire the experience necessary to give the most valuable service. To remedy this, the public must be educated to the true value of such service, and the surest way to educate is by actually demonstrating by honest and efficient work that such service does diminish the sickness and death, and increase the health and strength of the people.

The medical profession is the only one with which I am familiar, in which the most efficient members are constantly laboring to bring about a condition that would undermine their own financial interests. It is likewise literally true that the best element of the medical profession is striving for just such a happy consummation, secure in the belief that the prevention of disease, rather than the cure, constitutes the highest function of the true physician.

THE PREVENTION OF NEURASTHENIA,

BY

FRANKLIN FULFORD MASSEY, M.D., WERNERSVILLE, PA.

To prevent a thing it is necessary, in case of disease, that an organ may be affected and if it may, then disease can enter, and if it can enter one organ, it may enter or affect any or all organs, and that being the case, every part of the body should be taken care of properly to prevent disease. This statement holds true whether the disease be one of bacterial origin, accidental, physical, nervous or mental origin. The paper before us will discuss the disease known as "Neurasthenia." Neurasthenia is the term applied to a great variety of nervous conditions which are characterized by erratic nerve expression, and it has been the sad privilege of the author to have seen so many of these cases and their results that he feels that it is not an asthenic condition of the nerves alone that cause the disease, for far too frequently do the persons with the complaint show such a *strength* of nerve force in certain direc-

tions that they will compel family, friend, nurse and even doctor at times to bow to their wills. There is, however, a chaotic, a mixed up, a perturbed condition of the nerves at least in their actions, so let there be a new word coined and applied to the condition, and let the disease be called "Neuroperturbatis," for that term will explain and describe the condition better. To attempt to consider ways and means of preventing this disease, the following should be discussed:

1. Sex.
2. Religion.
3. Sanitation.
4. Medical and surgical interferences.
5. The mental attitude one bears toward the things that be—the Universe, in fact.

I. SEX.

- (a) Masturbation in either sex.
- (b) Deferred marriage.
- (c) Marital irregularities.
- (d) Any sexual perversion.
- (e) Mental attitude of female concerning menses.
- (f) Displacements, malformations, etc.
- (g) Childbirth and nursing.

It is needless to say that there would be no need of attempting to prevent something unless there be a tendency or a probability of a condition arising. Hence to consider the prevention of neurasthenia it is necessary to consider the likelihood of the condition becoming present and the reasons therefor.

The reason that sex is placed first is that so many of the great specialists consider that primarily sex is the greatest factor in causation of neurasthenic conditions. The great Professor Freud leaves *no* other cause as the primary one for the establishment of the disease. The author is not ready to accept such a broad statement, at least as applied to all cases here in America, no matter how true it may be of cases in Europe, but the facts are so apparent that sex plays a very active part to say the least in the ailment that it should be considered very, very seriously. Why is it that sex is so important? Let us see! There are a number of inherent qualities, qualifications and tendencies in every living thing and the greatest and most constant of these is sex, or the propensity or ability to reproduce kind. The disturbance of any normal

function—and all *inherent* qualities may be classed under this term—will tend to a disturbance of the first magnitude of the equilibrium of the body. Take, for instance, the sudden interference with deglutition, there is a choking; suddenly interrupt a person while urinating—there is a shock felt over the entire body; interfere with defecation and there will be a disturbance. These things noted are minor ones compared to sex. Man should have a normal expression of life, but this does not mean license, polygamy nor prostitution, for man is more than mere animal, there are mental qualifications in which he should excel as well as govern and control the physical, but man should have a normal expression of both, that is a monogamous and well regulated sexual *as well as* an intellectual intercourse.

With this much stated, let us consider some of the possible sexual causes of neurasthenia.

(a) *Masturbation in Either Sex.*

The harm in masturbation does not lie in the fact that the practice is indulged in without the aid of the other sex *as much as in the fact that it is essentially sneaky, cowardly and underhanded*. The damage done to the character of the average masturbator is greater than most of us would think, for even after the practice may have been stopped, there are impressions and memories of moral nature that tend to make the habitual masturbator a moral pervert in other lines. Anything that is dishonest, sneaky, etc., will affect the whole make-up of the person. A sneaky act causes a greater or less degeneration of the brain cells *because it is abnormal*. Masturbation in the male is bad enough, but in the female it is even worse, for there is a finer nervous make-up in the latter and the derangement greater for that very reason. Masturbation will cause all sorts of after effects, loss of will, lassitude, religious mania, insomnia, suicide, etc. Many of the breakdowns in school girls are because of masturbation either carried on by self alone or with another girl or boy. Whenever a physician has a case of neurasthenia in a young person, the habits should be carefully investigated.

(b) *Deferred Marriage.*

The call of Nature for the mate both of soul and body in Man is so great that a neglect of this will result disastrously as a rule. Social conditions are such that marriage is

deferred because of financial conditions, realization of the responsibility of rearing a proper family, etc. The deferring of this does not lessen the feeling of sex or the desire for intercourse.

(c) *Marital Irregularities.*

There are causes of neurasthenia which come *after* marriage and these should be carefully studied. As has been said before, any irregularity is not intended by *Nature* and must be paid for at some time. Among these irregularities are too much intercourse, too little intercourse, improper intercourse, etc. If there happen to be too much intercourse and the process be more or less mental there is too much strain upon the brain and the result is a loss of strength of the nerve cells there. Also too much intercourse will weaken the muscles and other parts of the body and will cause a weakness that will in time affect the brain and other parts of the body maintaining the nervous equilibrium. In the male there will be too much loss of vital fluids in addition to what has been just stated. The prevention of conception by means of syringing may cause a shock to the system and also aid in the cause of neurasthenia.

(d) *Any Sexual Perversion.*

One reason why sex is a disturbing factor and an aid to causing neurasthenia is that the sexual act is essentially a mental one. There is concentration of mind, there are certain thoughts and in fact the act is almost if not entirely brought about by a mental process. The pleasurable sensations, the after feelings all affect the mental qualities directly. Now, any perversion, no matter of what nature will disturb as may be readily seen, the mentality, and the more frequently or more constantly an act is performed, the greater and more lasting will be the effect upon the brain and the nervous system. Thus *any* perversion of the normal, legal and social proprieties will result or may result disastrously to the person. Nature planned that man should have intercourse and laws and morality demand that he should live above the plane of mere animals and each should be the husband or the wife of one only. It is also axiomatic to state that every facility is present for the making of a new human being. The entire make-up of man is such and therefore, even in adult life if this call is not heeded and proper and legitimate marriage entered into, there is a liability to nervous disorders due to habits formed or practiced, because mar-

riage is deferred, and the longer it is put off the more persistent will the habits become and a lessening for the desire for real and proper intercourse. This applies to both sexes. Thus it may be seen how deferred marriage may be a cause of neurasthenia.

While there is a paragraph or so upon religion, it is a fact to be remembered that sex and religion run hand in hand. That may be seen in the Jewish rites and especially that of circumcision. It is well too that sex and religion do run hand in hand for religion cannot help but make the person better if sincere, and if sex is not perverted, religion will help sex and sex by reproduction will bring into the world the proper kind of individuals. Perversions of sex are seen sometimes in those people appearing to be very religious and whenever religion is "overdone" by a person be sure to look for some sexual perversion.

(e) *The Mental Attitude of the Female During Menses.*

Much nervousness is caused by the female not meeting the conditions surrounding the menstrual periods as they should be met. There are things in everybody's life that must be met. It has been said that there is but one must in this world and that must is Death, but the one who tries to live according to that standard will be sadly disappointed for there are many *musts* and they must be met as surely as death. Teach every child as it develops into adolescence that the menstrual periods should be met with cheerfulness and a clear mental attitude as one of the things that simply must be gone through with. If this is done at the outset, there will be far less nervous disturbances at these periods and resulting from them, for the average girl makes the matter worse than it is and by making self uncomfortable, she establishes an aptitude to develop other uncomfortable feelings when not being too much above par at other times, such as complaining when tired out or suffering from an indiscretion from eating. The mind should be trained to be kept off of the normal functions of the body to live as nearly a normal as the individual can live, each individual realizing that there are things peculiar to the individual life.

(f) *Displacements, Malformations, Etc.*

It should not be forgotten that a malformation may cause an irritation at a part of the body and as an irritant upset the ner-

vous equilibrium and this in time cause a nervous disease and especially neurasthenia (phimosis, etc.). Also let it be remembered that displacements of the uterus will cause a nervous condition that will be bad for the person. All such conditions should be looked into as soon as noticed. In fact it is well to keep track of children from babyhood up into adolescence.

In this connection let us include injuries at childbirth, etc. These injuries, while insignificant of themselves at times will gradually make a strain upon the nervous system that will do damage unless the person be of very, very strong mind and determines to overcome all things.

(g) *Childbirth and Nursing.*

The bearing of children is of course a sexual act and it is allied to other sexual acts directly. It is a known fact that the mind of the parent will affect at least the nervous system of the child. It is also a recognized fact that the mental attitude of the parent toward the bringing of the child into the world will affect the nervous system of the parent and also will tend to make a more or less permanent condition of the parent. Therefore it is well to instruct all people who expect to become parents that there is an influence which their minds will have upon the child as well as upon self. As any untoward act or thought will affect the whole body, any unnatural thought will have or be able to have a bad effect upon the health of the person and it is because of this that such a wrong thought as making the child unwelcome in mind before birth will later if not at once react upon the child as well as the parent. On the other hand the mother-that-is-to-be should not give in to her uncomfortable feelings at the time gestation is going forward, for it is liable to react upon her. The *fear* that conception will take place when the sexual act is indulged in is also a harmful feeling to be entertained.

There is a thing also that mothers should know and that is that when nursing the child, it should be at the breasts only a reasonable time and not permitted to fondle too much. Also that it is best that every child be put to the breast if conditions are propitious. Another thing, do not postpone the weaning too long for if the child fondles the breast of the mother too late in babyhood there will be a likelihood that as it grows older it may want to fondle other people's breasts.

RELIGION.

Sex, Religion and Insanity are so nearly associated that it is well to consider that phase of life somewhat in connection with the line of thought in this article. There is nothing which should be so well-balanced as the religious belief of everyone. There is nothing that should be more stable than the same. Religion should be based upon hard facts and evidences not only known of self but others as well. Sometimes "experiences" in Religion are nothing but the most rampant of neurasthenic hallucinations, this is not, however, belittling the fact that there *are* legitimate religious conditions that exist and *should* exist and be experienced. It is a fact to be noted that Religion often develops very strongly at the same time as puberty and therefore is associated with it very much. From childhood up there should be a stable and firm religious environment, no child being permitted to "go at large," but this is not to say that the religious environment should be other than normal. Do not permit too much theoretical argument be heard by the child, but surround its life with practical expressions of a religious life, show the duty toward others, inculcate unselfishness by all means, instil charitable ideas into the minds as well as other fundamentals of religion and endeavor to keep it away from religious frenzy or too much concentration upon religion. In other words, try to balance the religious training of the child as you should anything else, and as growth is attained there will be a proper balance. If this applies to the child it must to the adult. There is such a thing as being overly-zealous, not in practical living but in impractical theorization. The religious zealot is almost always a neurasthenic and it only takes time to prove it. To help prevent neurasthenia, be sure to advise and practice practical religion and do not allow the mind to dwell uselessly upon the subject nor to the exclusion of its application in daily life. Be good, kind, true and pure and hold Almighty God and Christ as they should be held and then neurasthenia or neuroperturbatus will be lessened if not done away with. There are two classes of neurasthenics that I have met and they are the ones who have lost religion and of course happiness, and those who have some religious fanaticism. Strike the balance and you will have health.

SANITATION.

There is one thing that is absolutely necessary to maintain the health of the body whether in general or of the nerves alone and that is the proper sanitation and allied to it hygiene, so under the head of sanitation, including hygiene let us consider the following:

- (a) Clothing.
- (b) Food.
- (c) Bathing.
- (d) Sleep and Rest.
- (e) Occupation.

(a) *Clothing.*

Much has been said about the manner in which clothing is being worn in these days, but too much is *not* said *until* the greater majority of the people will be sensible in the matter.

The character of a person is certainly depicted in the clothing that is worn, and on the other hand the very clothing will contribute to the mannerism, and the mannerism to the general make-up of the individual, thus the dress that is suggestive and will expose the bust and ankles will tend to make of the individual one who will draw attention to self inordinately and any inordinate attention is not normal and not being normal there must be an abnormal effect upon the system and any abnormal experience will affect the nerves in abnormal fashion. Besides, some of the dress worn to-day is absolutely sensual, and that is an abnormal feeling for a person to experience. Shoes with too high heels will throw the body out of proper equilibrium and displace or tend to displace (although some may be able to overcome conditions in spite of the shoes, etc.) the organs of the abdomen by the very tilt of the body. Another thing to bear in mind also is that too much or too little clothing will also affect the body. Especially in childhood should the matter of dress be taken into account and the child dressed with decent freedom that will permit of exercise and allow sufficient air to reach the body and yet enough to prevent the "catching" of a cold. The body should always be *evenly* covered, thus a low neck dress with the person wearing furs is not best, but rather a thinner garment with no special exposure and no furs used. By practicing common sense in the matter of clothing, common sense is being learned for other things, and therefore if the clothing is worn sensibly so

will other matters in life in all probability. One other thing in passing in the matter of dress is that improper or suggestive dressing will affect the opposite in sex in a manner that may be harmful to the one *not* wearing the clothing that is, the beholder. Thus man in attending vaudeville shows is having impressions made upon his brain and nervous system that may accompany or cause a neurasthenic condition. The impressions upon some minds are very demoralizing—not simply from the moral side. To explain: it is abnormal for a man to lustfully look upon the legs or body of one with whom he cannot ordinarily meet or have association and the result is a disturbance which to say the least is not good.

(b) *Food.*

Food enters into the actual composition of the body and therefore what we eat and how we eat will determine to an extent what we are. Bear that in mind. A person eating meals irregularly will be forming a habit of irregularity and that is very bad for the constitution of every living being, for one of the greatest things that is to be noticed in all life, plant and animal is regularity. A meal partaken of in haste will not be properly prepared to be taken into the body and the body in consequence not properly nourished and then there is a basis for a nervous condition to be later developed. Foods out of their proper relationships or in improper proportions may affect the body. Spices will tend to increase the sexual proclivities of both sexes. Too heavy food at night will tend to affect the nerves. In the taking of food it should be borne in mind that the mental attitude at the time of eating will affect the digestion of the food and necessarily the nerves as well. Every person should endeavor to keep the mind away from thinking as to whether this or that or the other food is especially injurious or not, for the very consideration of the digestibility of food lays a basis for the limiting of the diet and when once a diet is limited, it is wonderful how the mind will first reject one food and then another and still another until the person is a regular neurasthenic on the matter of food. Practically all substantial foods taken into a fairly normal body will cause no damage and no questions should be asked concerning their digestibility. Eat, masticate properly and be pleasant; be composed at a meal. By doing this there will be lessened a likelihood of a neurasthenic stomach condition being developed.

(c) *Bathing.*

As the human body the same as other living things is made up of cells and ultimately elements, it stands to reason that if health is to be maintained that as near as possible, at times at least, there should be permitted a mingling with the elements. Of course it is recognized by the author that the elements do not usually exist in the free state, but the nearest among the common things that we have are water and air and sunlight. These exist in rather uncomplicated mixtures or compounds. For that reason water is good for the body, both inside and out. A reasonably large amount should be partaken of by mouth daily, the mouth rinsed and when there is a tendency to constipation, the bowels flushed. In cases of fever, water is as useful as belladonna, aconite, nitre or antipyrine. If water were used more, there would be less physical damage done than with the use of medicines at times. Water is an excellent solvent and one reason why it is good to be bathed with water is that besides removing dirt, it absorbs a certain amount of the impurities of the body because of its solvent power and thereby takes these impurities away. Many neurasthenic cases show that impurities are not thrown off as they should be and if judiciously used water would tend to prevent certain untoward conditions.

The clothing as a rule prevents vibrations and substances coming into free contact with the body and therefore it stands to reason that the removal of all of the clothing would be wise in air, sun or water baths to get the best results. In other words, the clothing may be said to act as an insulation to prevent freedom of contact with the air, sun or water. At times the entire human body should be exposed to the rays of the sun. In childhood it is well to have the children bathe in the open without any clothing except what Nature has provided them with, of course seeing to it that the opposite sex be not around.

(d) *Sleep and Rest.*

Physiologically rest is only a comparative term, for life is necessary to have rest as to have activity. As long as there is life there must be activity, molecular, cellular or otherwise. Rest is simply the cessation of wear and tear in one direction or another, and it may be very active in some cases, for to give the mind a rest the body may be quite active and sometimes to

give the body a rest the mind becomes active. Rest is not understood by the great majority of people. It is well to vary the activities of the body so that while one set of muscles or organs or parts is more or less active, another set is inactive, or comparatively so. That is what rest is. Thus it may be seen that at times play may be a form of rest. The person having a great deal of mental work to do can find rest by swimming, walking, playing of games, etc. Cultivate play even in adult life. The one who is overburdened with physical activity should find rest by giving the muscles an easier time and exerting the mind as in reading, writing, etc. If the proper amount of rest be taken and the physical and mental parts of life better balanced there would be far less neurasthenia.

Allied to rest is sleep. It is not the amount of sleep that counts in the maintenance of health, but the *kind* of sleep and how obtained. By the cellular activities there are certain substances thrown into the blood as the result of metabolism and these substances are of a more or less sedative action and when they come into contact with the nerves the nerves are lessened in their activity until somnolence is produced. When the cells have in *their* turn thrown off these substances, the sleep is over and the person awakens. Nature has so arranged that all cells do not rest at the same time, so that there may be a continuance of life. To maintain health there must be normal activity so that the soporific substances can get in their work. Any abnormal condition may interfere with sleep, such as mental activity that is uncalled for, concentration upon any subject—even sleep,—remaining up too late at night continuously and thus training the nerve cells to be able to overcome the substances intended to cause sleep so that by and by *the habit of sleep is more or less lost*. As the body is a thing of habit it is well to train it to receiving of sleep at regular intervals, just the same as regularity in eating of meals, etc. When a person fails to sleep he or she should not worry over the fact for the mere worry will cause a concentration and the concentration will be the thing that will prevent the very bringing about of what is desired—sleep. It stands to reason that if there be a serious interference with the function of sleep that there will be a disturbance in the nervous system at large, so it is well that everyone should realize the importance of rest, change of occupation and sleep at regular intervals as far as is practicable. One thing too that is overlooked is that although

a person may sleep, there may be some surrounding conditions which will not give the proper *rest* even in a sound sleep. As long as there is life there will be impressions sent to the brain consciously or unconsciously and these impressions are being made day and night, during the waking as well as sleeping hours. If sleep is taken at night where there is peace and quiet, there will be a minimum of impressions sent to the brain during the sleep, but if there be noises or great activity around the person, even though sleep may be had, there are impressions made upon the brain. That fact is one reason why the city man, even though he may be obtaining sleep, feels the necessity of getting away at times where there is peace and quiet. Whether or not he is aware of the fact, it is the call of Nature for him to get where there will be a minimum of impressions made upon the brain even without his conscious knowledge. Insomnia may result simply from the continual impressions being made upon the brain by living in the city with its incessant noise and activity. Every person should try to have quietude and rest while attempting to sleep.

(e) *Occupation.*

Motion is the key-note of the whole Universe. Motion is the cause of the molecular and atomic action. Motion in inanimate things is definite and occurs with regularity. Living things can and do manage to alter motion to some extent, for to some degree it is under the control of the will. As long as motion is normal and regular, so there will be a normal condition, but when disturbed there will be an abnormal condition. So it is with the human cosmos, there must be motion, but it must be or should be definite and regular. That brings us to the activities of mankind. To live—to obtain food, to get pleasure, to enter into life normally man must have some kind of an occupation so as to be able to get the wherewithal to live and be housed and clothed. That being true and the regularity and degree of activity causing or hindering health, it is well to consider a little how health may be maintained and disease, and especially nervous disorders be avoided, or prevented.

Occupation should above all things be as congenial as possible, but the trouble so frequently is that occupation is simply the work that we *have* to do rather than what we are fitted for or have a choice for. That being the case it is easily seen that it would be wise to select occupations in childhood for

which we would be fitted. Frequently *likes and dislikes are but matter of training* and it is not always that for which we are best fitted that we will like best at first. An aptitude for an occupation followed will tend to make the occupation more pleasant and satisfactory to the worker. Doing anything which is disagreeable or for which one is totally unfit but compelled to do will tend to "break down" the nerves. On the other hand, when a person is very well adapted to their line of work it is overdone. Therefore it may be seen that in occupation the person should select a trade or profession for which he or she is well fitted and then not become too much enamored of the work but keep well balanced. Children should really be *led into the selection of their life-work*. It is needless here to discuss the various occupation neuroses, for it may be seen that if work is not carried too far that it will do no harm. Balance is the word. It is the balance here and the counter-balance there that tend to make the well balanced individual and a well balanced individual cannot be a neurasthenic.

In the foregoing paragraph we have discussed the matter of occupation as in trades and professions, but there should be an earlier consideration of the matter. Human beings, together with other animals will act from habit more or less and even when meeting new conditions in the experiences of life, the habit of having met other conditions will determine to an extent how the new experience will be met. As the normal child will be active and will play and be inquisitive, it stands to reason that there will be something to occupy the time and the attention. For that very reason it is well in very early childhood to direct the occupation of the childish hand and mind. It is not well to let a child have its own way always in play and to do just what it wants to do, but it is wise to *direct* even the play of the baby hands to some extent. If this is not done the character is apt to become a selfish one and a selfish character is a good foundation for neurasthenia.

The very same attitude should be taken toward school. The child should be trained to study and apply the mind to the topics, not overdoing the matter, nor neglecting it but keeping a good balance. If an aptitude is seen for certain lines, train in that direction but do *not* do so to the exclusion of other studies. Keep the child evenly balanced while developing. Lessons should be *explained* and made as pleasant as possible for the growing child. Children absorb and copy after those with

whom they come into contact, so it is well to have well balanced teachers to instruct and handle children—teachers with stability of character and determination to form those of the children under him or her. The nervous state of the teacher is transmitted to the pupil. In considering school, the vacation period should not be forgotten, for it is during this period that the child will develop tendencies and make companionships and form habits that will be to the detriment of the health and morals so often. A child should have its activities directed even during the vacation period. Of course the age, environments and condition of the individual child will be the foundation for whatever action is taken for its betterment. Sports, such as fishing which teaches patience, rowing which trains to a regularity of motion, swimming which exercises so many different sets of muscles and grace of movement, baseball which trains to swiftness of action, and other sports are good for both boy and girl during the vacation period. The boy will obtain enjoyment from some of these sports anyway but the girl should not be neglected in this direction. If more girls would indulge moderately in some of the above enumerated sports their nerves would be in far better shape when they become older. Play should be an occupation of everyone. A certain amount of play is essential to health of old and young and should be encouraged.

4. MEDICAL OR SURGICAL INTERFERENCE, ETC.

It must not be lost sight of that certain conditions such as headaches, abdominal pains, etc., when prescribed for and certain medicines are given irrespective of the real causation that such medicines must have an effect upon the entire nervous system and therefore their use is to be discouraged. Drugs not in the list of the "forbidden" according to law may cause the foundation of neurasthenia. Also remember that the after effects of many surgical operations are the cause of neurasthenia. These hints are just dropped in passing.

5. THE MENTAL ATTITUDE ONE BEARS TOWARD THE THINGS THAT BE—THE UNIVERSE, IN FACT.

To each living individual as far as life is concerned *self* is the principal consideration—so much so that "self preservation is the first law of Nature" is an old and accepted adage. This is absolutely true when speaking of the purely vegetable or an-

imal matter, but when *man* is reached, when there is a state of *mind* that can be dealt with, then it is possible and more than possible, but right and proper that there be something more than *self* to think of and plan for and to consider. If man possesses a soul and we have every evidence that he does possess at least a consciousness that is above that of the animals, if man be that superior and *mind* consists of that superiority then the *purely physical side of man should be but a secondary consideration.*

All animal and vegetable matter purely and simply will accept the conditions which surround them and meet these conditions or *die*. The plant placed in poor soil will bravely try to grow. The animal out of its element will also endeavor to exist. No question is asked as to the why or the wherefore, but the conditions as they are are met with, contended with or death is the result. And why? This is the reason: The environments, the world, the universe all are acting in accordance with given laws and the disobedience of any or all of these laws results in disorganization, inferior conditions and complications and as soon as there are complications it is difficult for any finite being to really and precisely and constantly separate the cause and effect.

Man being above animals in mentality alone, will exercise this mentality, but as a rule he does not realize that the use of the mentality is as much as the exercising of a physical force as any other that can be. Let us try to prove that statement. There was a time when fire, earth and water were considered as the elements. Later the physical elements were considered as being such substances that could not be further divided into something else, as, for instance, oxygen, this is oxygen and remains so until combined with another substance. There are a number of elements somewhat less in number than a hundred and they include oxygen, hydrogen, carbon, nitrogen, iron, lime, etc. Then later there was a further study of the elements as to their state of being, and matter was then supposed to exist in three states, solid, liquid and gaseous, and still later it was found out that there must be some other state for ether and ether waves were discovered. The writer claims that there are five states of matter or elements and to make this article clear it may be well to enumerate them.

1. The solid state. This state is the state in which we see rocks, trees, etc. This condition of matter is not so powerful as some others as it is stationary of itself.

2. The second state of matter is that of liquids, such as water. This state of matter is more powerful than is the solid, for it is more readily changed into power such as running a water wheel, etc.

3. The third state of matter is the gaseous one, and this is more powerful than either of the two just mentioned, for it may be condensed and expanded and directed into various spheres of action. Thus the steam railway engine is made powerful by the gas known as steam, the auto by the gaseous state of gasoline and air.

4. Not so many years ago there was found to be an ethereal state of matter, and this is very powerful, for by it are we able to have wireless telegraphy and some other wonderful things. This state of matter is just being introduced to the full comprehension of man, and is destined to bring forth great things when more fully understood.

5. The fifth state of matter is that of spirit or soul. It is least understood of all of the states of matter and is the most powerful. By it all things are governed in life, and in man by it is his very being made an entity. It is that which makes one man a separate man with a separate understanding and life and consciousness and capability. By it also is man working for or against his own interests, health and happiness as the case may be. This state of matter is working under laws just as are all of the other states of matter and as it is a great factor in the life of man, it is well for man to consider self as an entity and to realize that *self* must work along with the rest of the universe, for if it will rebel there can be nothing but discord and even worse than that.

Bearing these things in mind, let us consider how self will fight the universe and some of the results of the losing fight.

Man, being superior, is conscious of the fact, and by reason of knowing the truth, he feels his power and will exert it as is right and proper under certain conditions. But man does more than this—feeling and appreciating his power he becomes egotistic and overestimates his place and his power and his rights. In reality it is egotism which makes man act as he does as a rule. Each separate individual feels that he or she has paramount interests in the world, each feels that he or she should have privileges etc. equal to or above others. There are as many positions for individual life among humanity for each to fill as there are among the plants and animals, but he refuses

some times to recognize that fact and will not adapt self to the conditions as do other forms of animal life. as for instance the elephant occupies its place and the ant its, etc., but if elephant would want what capabilities the ant possesses, or vice versa, or if the violet what the apple tree has, where would the world be? Man, feeling that his interests are above those of others even of the same species fights for them, demands them. If he would stop long enough to realize that each thing in the universe is placed *according to some law to fulfil some object* he would realize that pleasures, temptations, trials, tribulations and what not are all or will all lead to a final conclusion of the right and proper sort if he will but live according to the law. The living according to that law is the not finding fault with certain inevitable conditions, the acceptance of certain things and not necessarily discounting them, but accepting them and taking the difficult things of life as but something to overcome just as the root of the tree must work in the dark and overcome obstacles even to the splitting of rocks to get the needed nourishment for the tree.

As each tree and flower and animal must meet certain peculiar conditions, so each life must meet and overcome the things that enter into its experience. There is no getting away from it. Some trees are better in appearance than are others, some flowers bloom more profusely than do others, but it is not always the mighty, the great, or the straight or graceful plant that is the most useful: the rose is beautiful, the maple is grand, the oak is mighty, the violet is sweet of odor, but the potato is ugly of form, the plant looks like a weed, misshapen and unattractive but what would humanity to-day do without it? The individual human life is just so—there may be deformities which exist, there may be a lack of beauty or grace but what does that matter? for man excels in *mind* alone. If man belittles self sufficiently to let a deformity annoy or a physical condition take up the time of the mind which should be put to a higher purpose and prevent its growing into what it was intended it should be *man* will pay the penalty every time by losing strength in other directions. for to maintain good health there must be an adaptability to peculiar local conditions which exist in every life. People having physical defects should also keep the mind away from such defects as much as possible. It may be a trial to be unlike other people, but no two people are alike anyway and the comfort that the deformed person may

have is that the greater the physical defect, the greater aptitude there is for the mental and spiritual development and the less the trials and temptations in a physical way that must be met with and overcome. The attempts made by many to correct deformities will be worse upon the system than the deformity and its effects. By referring to the best medical authorities we find that in spinal affections especially after childhood the use of the brace to any great extent will seriously affect other parts of the body even though the deformity will be improved or lessened. There will be a constant irritation and strain, pressure upon other parts of the body, the hip, chest, jaw, teeth, etc. Every cripple or deformed person should be glad for one thing and that is as above stated the less likelihood of temptations of life coming their way for because of the very fact of the physical deformity physical temptations to be led astray by others or self will be ordinarily absent to a great extent. This applies to all physical defects. Even in childhood physical corrective apparatus should never be applied unless the irritability resulting therefrom be taken into account. When man becomes displeased with physical conditions over which he individually has no control he is contending with the *powers that be* and only defeat will be the result in the end. If the mind be concentrated upon the deformity, the loss of an eye or arm or what not the worry over it becomes worse than the defect or loss of itself.

There are other conditions to be met with in life as, for instance, financial reverses, but worriment over the same will not make the correction but prevent a successful re-establishment upon a firmer foundation. Why does man have financial troubles? Because to a great extent he has ceased to be a producer (except of troubles) and by so doing has disobeyed the inexorable laws and the punishment will follow. Family and other cares bring with them their worriment but they must be met with the same as other things. There are certain things that every life must contend with and the more grace with which they are met, the *stronger* will be the individual. Grief over the loss of loved ones will only act to the detriment of the health when too intense: too close application to business will bring about a reaction for man was only prepared to do a certain amount of work to fill his position in life. The universe was planned in a certain manner and to carry beyond what was intended for each individual to do will result disastrously.

One of the greatest things that must be contended with is the matter of trying the whys and wherefores when the time should be spent in meeting with their results. In other words, man should place himself as a species and as entities where he will accept surrounding conditions and try not to alter them but make the most of them, realizing that *mind* is the greatest thing in life and that given latitude it will make every person happy and contented. Man must not contend with the universe, for he is fighting a losing *war* and as has been said, "War is hell," and so it is and when man enters the war against the powers that be, he is entering damnation at least for the time being if not for all time. By doing this he will make it easier for fellow man to live, he will be less selfish, he will not have mind upon self, he will improve self and others.

There is an optimistic rhyme which goes:

"What's the use to cry and fret,
Take life as you find it,
It's the best world you've been in yet,
Smile and never mind it."

Others have been able to do this and it is the duty of us all to make life happy for all around us, keeping as much of fault-finding, unkindness, criticism and injustice to self as possible, accepting pain, position in life, and physical conditions generally and specifically and realize that there can be worse. If we are contented let us spread some of the sunshine around and then we will be living not in the antagonistic attitude toward the universe and placing self against it, but living with the powers that be and improving what we do have.

Every living human being desires to be as happy as is possible and if that be the case he or she should try to be so. To be happy each and every one of us must place self within the bounds of evenly acting laws and these are the only laws of the universe. So if you wish to be contented and happy do not place self against the universe.

CONCLUSION.

What then are we to remember in trying to prevent neurasthenia or neuroperturbatus? That the mentality of each person must train itself to meet conditions as they are, that a good balance must be maintained in all things of life from the washing of the face or body to the eating of the meals and the

selection of one's lifework, and that while doing so that there should be taken a reasonable amount of recreation, avoiding all artificialities, living as near to Nature as practicable and endeavor to be at peace with God and man as well as the surgeon.

Teach this! Live it! and neurasthenia will be lessened and even possibly obliterated.

CATARRHAL AND INFLAMMATORY DISEASES OF THE MIDDLE EAR, THOSE OF BACTERIAL AND NON-BACTERIAL ORIGIN,

BY

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NON-BACTERIAL. are the catarrhal. Bacterial, are the inflammatory or suppurations, or the result of the invasion of bacteria or micro-organisms. The catarrhal are due to the closing of the Eustachian tubes either by inflammation from colds, or by growths.

The catarrhal and inflammatory diseases are divisible into acute and chronic types, viz.:

1. Acute secretive catarrh.
2. Acute tubo-tympanic catarrh.
3. Chronic otitis media, "catarrhal otitis."
4. Chronic adhesive processes following simple catarrh.
5. Oto sclerosis.

Suppurative diseases are due to bacteria from scarlatina, measles, diphtheria, etc.

Non-suppurative "toxaemias" or serous inflammation, may go on to suppurative conditions.

Acute secretive catarrh of the middle ear occurs most frequently in children of from one to two years of age, to that of sixteen years. We find on examination the Naevo line, the fluid behind the drum membrane has a greenish yellow tint and appears as a small hair line, the hammer handle looks narrow.

The acute catarrhal diseases are generally due to adenoids, or follow acute inflammatory diseases.

Symptomatology. Pain, no fever or slight.

We find adenoids accompanied "generally" by enlarged tonsils, chronic rhinitis, partial deafness at times. The conditions cause a closure of the Eustachian tube. The result of this closure is a retracted membrana tympani.

The mucous membrane of the ear seems to have the property of absorbing the air contained in the middle air spaces. (Boeninghausen.) With the closure of the tubes, and the absorption of the air in the middle ear, there is a negative pressure and the pressure in the external auditory canal forces the drum inwards toward the promontory.

When the air absorption continues the drum membrane is drawn inwards, this process continues until the elasticity of the drum has reached its limit. A hyperæmia results from which a transudate finally flows into the tympanic cavity.

This transudate according to Brieger, Lunois, and Kummel is sterile.

Course. When the rhinitis, coryza, pharyngitis, etc., abate, the catarrhal condition of the middle ear gradually subsides, unless they have adenoids, unless the tubes remain closed or partly closed by the cold in which event the tubal and middle ear catarrh often persist for months and even for years, until involution of the adenoid tissue takes place at puberty, and then if the changes in the middle ear have not become permanent, the catarrhal otitis subsides, generally, however, irreparable mischief has been done to the hearing apparatus.

Diagnosis. The diagnosis is based on the otoscopic findings, the hair line, hyperæmia of the drum membrane. The level of the transudate will be found to have changed after inflation, or in changing the position of the head of the patient and, in addition, air bubbles are often found.

Prognosis is favorable whenever the attack is promptly relieved by appropriate treatment, but want of treatment often results in the chronic form of the disease, and permanent damage may result.

Treatment of acute tubo-tympanic and acute middle ear catarrh:

Where adenoids and enlarged tonsils or if polyps or new growths are present, remove them. When there is a bulging of the drum membrane or intense pain, incise the drum membrane and after a while use suction tube or tubal inflation and give the appropriate remedy. In children the removal of the adenoids and hypertrophic tonsils often terminates the attack.

The adenoid operation should not be performed during an acute attack. After the operation use air douche, "Politization."

CHRONIC MIDDLE EAR CATARRH.

It is impossible to draw a line of demarcation between the exudative catarrhs of the middle ear and of the adhesive processes developed from them, "Politzer." The reason for this is that tissue-changes, which lead to permanent disturbances in hearing, often become fully developed during the exudative stage of the catarrh, and that in some forms, exudation and the formation of new connective tissue takes place almost simultaneously, "Politzer."

Etiology. The most frequent causes which favor the development of catarrhal adhesive processes from a middle-ear catarrh are:

1. Frequent relapses of an exudative middle ear catarrh.
2. Chronic affections of the naso-pharynx.
3. General diseases especially a lymphatic diathesis, tuberculosis, syphilis, Bright's disease, chronic rheumatism, anæmia and marasmus.
5. Pregnancy and the puerperal state.
6. Hereditary disposition.
7. Frequent colds, a cold, moist climate.
8. Toxæmias, alcohol, tobacco.

These conditions occur most in middle-aged and old people, less in children.

The membrana tympani on this membrane, we will find retractions and opacities, chalky deposits, and a clouded membrane. The membrane may be united to the inner wall, or the promontory by these adhesions. Subjective symptoms, subjective noises are frequent. The noises are intermittent, often are continuous, especially if the labyrinth is affected. The noises are worse in bad weather and after indulgence in alcohol.

DISTURBANCES OF HEARING.

This depends on the amount of the obstruction in the sound conducting apparatus, and the changes in the labyrinth. The deafness for speech is often quite marked although they may hear music, and singing, if not at too great a distance away. The perception through the cranial bones for the watch may be normal but, however, it is more frequently absent or diminished.

The power of hearing better in noises is not infrequent in cases affected with the adhesive processes.

Tests with the tuning forks are generally negative as in middle ear catarrhs. Treatment of chronic adhesive processes: Politzeration with Politzer bag, or if the tube is closed, and cannot be opened by it or Eustachian catheter open with bougies, also use Siegel otoscope or a vibrator.

If you find the drum membrane is adherent you may loosen the adhesions by incisions of the adhesive bands. With the air douche may be used medicated oils through the catheter. After the tube has been opened we use ether and chloroform, vapor or menthol or may use pilocarpine grs. 2 to the ounce of oil. Give merc. cor. 1-1000 for the tinnitus.

CHRONIC TUBAL CATARRH.

You will find a history of repeated catarrhal attacks, dull retracted membrane, limited mobility of the membrane or of the hammer handle, and impairment of the conductive apparatus. Watch the movement of the drum membrane with the Siegel otoscope, the hammer handle is stationary and the upper fold of the membrane, "Schrapnell's membrane," moves.

These cases are treated by Politzeration and Siegel's otoscope, but if you find the tube is already too much dilated you should not use them so frequently; as many patients have learned about the Valsalve method and *practiced it to their detriment*.

Inflammatory diseases of the middle ear are divided into acute and chronic otitis media.

Acute inflammation of the lining membrane of the middle ear and mastoid processes results in the production of a purulent exudate and is distinguished from acute catarrhal otitis media by the greater severity of the inflammatory symptoms and the presence of pus cells in great numbers and the perforation of the membrana tympani. "If not artificially relieved by a paracentesis." The discharge is at times muco-purulent, and then it may be wholly purulent. If the disease progresses it spreads through the aditus into the mastoid antrum, and extends to the lining membrane of the mastoid cells, and terminates in acute mastoiditis and other complications often ensue.

The infection is usually through the Eustachian tube.

Etiology. The most frequent causes of acute inflammation of the mucous membrane of the middle ear; atmospheric influences, drenching the body, cold, and sea baths, naso-pharyngeal catarrh, scarlet fever, measles, variola, typhoid fever, influenza, erysipelas, pneumonia, bronchial catarrh, and chronic

(sero-mucous) middle ear catarrh (Politzer). It can also be caused by douching the nose and water getting into the Eustachian canal.

In otitis media acute "suppurative" the streptococcus pyogenes which are found in the secretions has been found to be the most frequent cause of acute middle ear inflammation. "Neumann and Reuttin."

In children we often have the diplococcus pneumoniae (Frankel); may also have the staphylococcus pyogenes albus and aureus.

Symptomatology. The onset is usually sudden, following an attack of cold or lagrippe, or during the later stages of one of the exanthemata, scarlet fever, measles, etc. We have intense pain which persists until the rupture of the drum membrane. In children we often have a chill at the onset. We have then a considerable rise in the temperature. A rise of temperature among those who have just passed through scarlet fever or measles usually means ear involvement, unless accounted for otherwise. If they have pain behind the ear we must watch for mastoid involvement.

Appearance of the Membrana Tympani. This varies according to the degree of the inflammation. Before perforation the drum membrane may be of a pinkish color, more often it is of a bluish scarlet color, all signs of the handle of the malleus having disappeared and only the short process is visible. In severe cases there will be great congestion of the bony auditory canal.

We find bulging of the membrane due to pressure of fluid in the tympanum or to swelling of the tissues, also may find large blebs hæmorrhagic and serous in the layers of the drum membrane.

Perforation usually occurs in the lower anterior or posterior quadrant and very seldom in Shrapnell's membrane in acute cases.

The otorrhœa begins early after the event of the disease. The rupture may be delayed because of an outflow of pus through the Eustachian tube. At the commencement the fluid is mostly serous in character but finally becomes purulent. If the disease progresses favorably under proper treatment, it gradually subsides and in from three days to five or six weeks it disappears.

Prognosis. Under favorable conditions the prognosis is good.

It is unfavorable when influenced by serious complications, especially in strumous, tuberculous, or syphilitic patients. Repeated attacks of acute suppurative otitis are unfavorable especially upon the hearing and tendency to become chronic.

Treatment: Rest in bed if have much pain and if the bulging membranes does not rupture do a paracentesis; may douche the external canal with hot water to relieve the pain previous to rupture. I also find bell., puls., hepar, acon., etc., of great value. In doing a paracentesis make a clean cut in the drum membrane through the posterior quadrant.

You may have a small perforation and have to enlarge it for free drainage; be careful that your knife does not touch the ossicles; after the paracentesis you will have a flow of pus and blood which can be cleansed out with bichloride of mercury, 1 to 3,000, or carbolic solution; and a strip of gauze tape saturated with 10 per cent. Burrous fluid inserted and the ear bandaged.

Acute mastoiditis is usually a result of a continuation of the inflammation to the lining of the mastoid cells.

Symptoms: There is a circumscribed area of tenderness over the mastoid tip. There is a tumefaction of the tissues and there is marked redness and bulging of the ear forward. Pain is severe and there is tenderness "marked" to pressure; there is slight fever and stiffness of the muscles of the affected side. Acute mastoiditis often runs its course to resolution without suppuration; occasionally it terminates in abscess.

The prognosis is favorable in uncomplicated cases.

Acute purulent mastoiditis is caused by the invasion of the mastoid cells by pathogenic micro-organisms, from suppurative conditions in the middle ear. In most cases the purulent condition subsides in response to drainage, but, if after five or six weeks the patient has a recurrent attack, after improving, you will find (1) the fever 100° to 104° ; (2) pain in the region of the ear and mastoid process; (3) tenderness over the region of the mastoid; (4) thickening of the periosteum over the mastoid; (5) thickening over the posterior superior osseous canal; (6) sagging of the auricle, it sags and is pushed forward or away from the head. (Pushing away from the head is a symptom of advanced mastoiditis.)

The character of the discharge is changed: there is a perforation of the membrane and tinnitus. In these cases advise antrotomy and mastoidectomy.

**THE CLINICAL FEATURES, DIFFERENTIAL DIAGNOSIS AND TREATMENT
OF GASTRIC ULCER.****BY****JOHN P. SHARPE, M.D., HOMOEOPATHIC HOSPITAL, PITTSBURGH.**

THE history of people suffering with symptoms of a disease, which we know as gastric ulcer, can be traced back as far as the sixteenth century. But lack of any definite knowledge of diseases at that time, prevented a diagnosis of the real existing condition. It was not until the patient had died that an autopsy showed an eroded area upon the lining of the stomach. This was not recognized, however, as the real pathological condition, for it was thought this erosion was due to post mortem changes, and not the cause of the symptoms which the patient presented during life. It was not until 1829 that Cruveilhier pointed out this erosion, or ulceration, was a distinct disease, and not the result of post mortem changes as had been previously supposed. Since 1829, owing to increased medical knowledge, resulting from thorough laboratory and research work, this disease has become of great interest both from a medical and surgical standpoint.

Gastric ulcer, as we all know by this time, is a pathological condition existing in the stomach as the result of a rupture or dissolution in the continuity of the mucous membrane. As to the causative factors producing this condition we shall discuss later.

During the last few years many terms have been used in an effort to describe the ulcer; but at the present day we speak of it as being acute, (non-indurated) or chronic (indurated).

The acute ulcer occurs more frequently in women between twenty and thirty years of age; the ratio being three to one. The ulcer may be single or multiple, usually soft in consistency, oval or round in shape, and has the macroscopical appearance of being punched out. The edges are rounded and the base of the ulcer smooth. In men the acute form occurs most frequently between thirty and forty years of age.

In the chronic form the ulcer has an indurated appearance, hard in consistency and usually occurs single. The size varies up to several centimeters. The ratio between the two sexes is about even in this type. As chronic ulcer is the result of the

acute type whose pathological process has not been checked. I can see no reason for dividing the two, or considering the symptomatology under separate headings; except in the fact that the acute type of ulcer presents the symptoms in a more severe form, while the symptoms of a chronic ulcer may be milder, and thus the patient gives the history of gastric disturbance extending over a longer period.

In regard to the location of the ulcer the greater curvature has the largest percentage, the pyloric region next, followed by the anterior and then the posterior wall.

When we come to study the etiology of the disease we are at a loss to point out any definite or absolute cause for this ulceration.

Ulcer is often preceded for a considerable period by anemia or chlorosis, and as this condition and gastric ulcer occurs more frequently in women, does it not seem possible that chlorosis would produce malnutrition of some part of the lining of the stomach, with the resulting formation of an ulcer several years later, due to the continued action of the hydrochloric acid upon this weakened part of the mucous membrane?

Trauma has been mentioned as its cause; particularly in those who work at shoemaking, weaving, tailoring, or other occupations in which pressure is brought upon the abdomen, especially in the epigastric region.

Cases are also known in which there has been a tear in the mucous membrane, manifesting itself by the symptom of hemorrhage, as the result of trauma, and the patient recovered several days later without ill effects.

In many cases gastric ulcer has developed from several days to months after severe burns.

Thrombosis and embolism have been advanced as the causative factors. Embolism of the gastric vessels is a rare condition, while thrombosis is somewhat common and may be the result of continuous vomiting. It can be easily seen that the effect of a thrombosis would ultimately lower the vitality of the mucous membrane around this vessel, and later become eroded by the action of the gastric juice.

Gastric ulcer has also occurred in those who have led lives of irregular habits, hard work and worry; also in those exposed to various kinds of weather. A number of cases have had an alcoholic history, probably due to the results of constant dehydration of the stomach's lining.

Ulcer has also occurred in those who have suffered from septicemia, tuberculosis, or infections of the gall bladder, which traveling by the blood, could have caused the formation of minute foci in the stomach, and resulting in a degeneration of the mucous membrane and finally an ulcer.

Spasm of the stomach wall should be considered as a causative factor, as this would tend to produce local anemia, malnutrition and lastly ulceration of the membrane.

We must not overlook the advanced stage of heart or lung diseases, for they not only cause passive congestion in the kidneys, liver, etc.; but also in the stomach. This condition predisposes to hemorrhage, from rupture of these vessels, if any violent action or exertion is indulged in by the patient.

We are also prevented from giving the cause of an ulcer as due to a rupture of the mucous membrane alone, for there are numerous cases on record of people who have made a constant practice of swallowing various articles, including knives, nails, tacks, etc., and have these exist in their stomach for years without any symptoms or gastric distress. Surely the lining of the stomach could not escape traumatism; or even erosion from the constant action of these articles, and yet no ulcer was found to exist. This would seem to prove that some other condition must be present, either locally or in the blood, to cause an ulcer.

From this reasoning it will be evident that this disease may be due to any number of causes, yet we are unable in the present state of actual knowledge, to accept any one of them as being definite or absolute.

When we come to consider the symptoms and diagnosis of this disease, we are again confronted with the same indefinite and unreliable manifestations as the causative factors, of which I have just spoken.

The diagnosis of gastric ulcer may be easy, if the symptoms are definite and clear cut; or just the reverse if they are indefinite and obscure.

The onset is likewise variable. It may occur without any previous manifestations; presenting itself as a sudden and profuse hemorrhage, or by a sharp and severe pain. In other cases the symptoms may be those of a gastric disturbance lasting over a number of years. Therefore, to properly describe the various modes of onset, would require pages of unnecessary writing, and nothing definitely gained in the end, so we will pick out for our study a typical case.

We must first consider the history of the patient. Some will say that they have suffered, more or less for years, during this time they have had alternating periods of gastric disturbance and good health. The attacks coming on, especially in the spring or fall, without any known cause. Other patients will give the history of repeated attacks, which last days, weeks, or even months, and then have an intermission of good health until the next attack. These attacks appear and disappear over an interval of years, the time between good health and suffering, however, gradually becoming shorter, until the patients finally reach a period when they are never without pain or some form of gastric disturbance.

Their appetite is generally good. It is not because they are not hungry that they do not eat; but it is the substantial foods, as meats, potatoes, etc., which cause the intense pain. Their diet thus consists chiefly of liquids, or semi-liquids, such as milk, broths, soups, cereals, custard, etc.; they refrain from any food which will irritate their ulcer.

The most characteristic symptoms are pain, vomiting and hemorrhage; associated with these are tenderness in the epigastrium; anemia, eructations, loss of weight, etc., may be present in a more or less degree. They vary so greatly in each case that they cannot be looked upon as having much diagnostic value *per se*. We should consider the first three symptoms as most important, and the others as minor ones, of use only to substantiate the ones upon which we make a diagnosis.

As we take up the study of the symptoms just given, let us not only give the chief characteristics of that symptom as it occurs in gastric ulcer; but also endeavor to differentiate them from the same symptoms that are present in other diseases of this region.

In speaking of the epigastrium as being the seat of the pain, we must not for a moment lose sight of the fact that every pain in that region does not mean gastric ulcer. Epigastric pain also occurs in cancer, gastritis, tabes dorsalis, gastralgia, appendicitis, carcinoma of the mesentery, diaphragmatic pleurisy, diseases of the pancreas, and in various neuroses, as hysteria, neurasthenia, etc.

Perhaps it is due to the average practitioner's lack of knowledge regarding these diseases, especially the location of the pain, that almost every patient coming to him with pain in the epigastric region, is told that he or she has a gastric ulcer.

Being unable to differentiate between these abdominal diseases, he covers up the real existing pathological condition by the term "gastric ulcer," as many physicians do by the much-abused word "neurasthenia." When patients are not relieved by the treatment and the symptoms become worse, then an operation or even a post mortem examination is necessary to discover the real condition, then it is that the physician discovers that he has made a gross mistake in his diagnosis.

We must never forget after beginning to practice, that it becomes our duty to make a thorough and continuous study of each individual case before rendering a diagnosis, and being sure of our convictions, treat the case accordingly.

This may seem to be a diversion from the subject, but it illustrates how the pain of gastric ulcer may be confused with that which occurs in other diseases, that we must analyze the pain and remember that pain extending over a long period of time, indicates that the lesion from which that pain originates is progressive in type.

The pain of ulcer may vary from sharp and severe in character, to a continuous dull boring, or gnawing one, usually in the epigastrium, perhaps slightly to the left of the median line. It may be localized, diffuse, or extend posteriorly and manifest itself between the spines of the ninth and tenth dorsal vertebrae. We must consider the time at which this pain occurs. The most characteristic time is anywhere from fifteen minutes to two or three hours after taking food. This variation is thought to have some bearing as to the location of the ulcer. The further away the ulcer is from the cardiac orifice, the longer the interval between taking food and the appearance of the pain. Next, we must consider the regularity of the pain. Does it occur some days and not others? As has been mentioned before, the pain of gastric ulcer along with the other symptoms, occurs in periodic attacks, between which the patient is in apparently good health. Finally, the means by which this pain is relieved. It has been found that an ulcer occurring on the anterior wall of the stomach, is better from lying on the back, and vice versa for an ulcer on the posterior wall. More important is the fact that the pain is better after vomiting, or by taking alkaline drinks, as sodium bicarbonate. This neutralizes the acids of the gastric juice and prevents them from acting upon the inflamed mucous surface. Many patients become chronic users of sodium bicarbonate in their effort to seek

relief. The pain is worse on pressure; in gastralgia it is better.

Other diseases which have severe abdominal pain, especially in the epigastrium and which may simulate gastric ulcer, are those of *tabes dorsalis*, gastralgia, carcinoma, gall stones, appendicitis, etc. So these must be differentiated.

In *tabes* the pains may at first resemble gastric ulcer; but later on as the disease progresses, they become more severe and lightning like in character, and when associated with vomiting give the typical gastric "crisis." Further on, the characteristic symptoms appear, as Argyll-Robertson pupil, Romberg's sign, absent knee jerk, the gait of the patient, etc.

In gastralgia the pains are more severe and longer than in ulcer, usually relieved by pressure and less affected by taking food. We must also take into consideration the temperament of the individual. They are more or less of a hysterical or neurotic type, the general health is less impaired, the patient less anemic, and the attacks occur more frequently when the stomach is empty.

In carcinoma the pain is quite constant, it is less acute, and usually a continuous, dull aching or gnawing sensation. The growth may increase to such an extent as to rapidly involve many of the surrounding organs before a distinct tumor is felt. The age of the patient, the marked emaciation and cachexia, the characteristic vomit, loss of weight, and the laboratory findings, make the diagnosis of this disease relatively easy.

Although in gall stones the typical pain is at the tip of the ninth costal cartilage on the right side, it may be referred to the epigastrium as the result of a stone lodging in the cystic duct. The patient may give the prodromal symptoms of having suffered from mild, irregular dyspeptic attacks, as gastric distress, eructations, etc., coming on after eating or at irregular times, often of sudden onset and of short duration. These symptoms are relieved by belching and at times by slight vomiting. They may pass without much notice to the patient, when suddenly in the midst of good health, they present themselves in a more severe form, and give the true gall stone colic.

In appendicitis the pain may be diffuse at the onset, but soon becomes localized at McBurney's point. The rigidity of the right rectus muscle, fever, etc., all point to a diagnosis of this condition.

The vomiting in gastric ulcer is a prominent symptom, and occurs one or two hours after meals, when the pain has reached

its greatest height. The cause for this is due to the pain acting as an indicator for the ulcer. As the continued action of the food causes a gradual irritation of the ulcer, so does the pain increase until the inflamed surface of the stomach reaches a point where reflex action takes place, and the stomach empties for its own protection. The patient is then relieved until the next meal. Again, we must consider the fact that vomiting may occur at night; or when no food is in the stomach. This is due to the increased hydrochloric acid collecting and causing an irritation of the ulcer at night, as the food does during the day. It has been mentioned before that these patients constantly get up during the night and take bicarbonate of soda to neutralize the excessive acidity in the stomach and thus have an amelioration of their symptoms.

The vomiting in carcinoma is often delayed, more copious, and mixed with blood, giving it the characteristic coffee appearance. The appetite of a carcinoma patient diminishes gradually until it becomes lost entirely.

As pain indicates that the lesion is progressive in type, so does hemorrhage indicate it has progressed so far that an erosion of one or more of the gastric vessels has taken place.

The hemorrhage may be large in amount and easily seen in the vomitus, especially if from one of the larger vessels, as the splenic, pyloric or coronary. In some cases where there is ulceration of the smaller vessels, the blood may not be visible to the naked eye, and only found by microscopical examination of the gastric contents.

The finding of occult blood is open to question, as it may have been due to the faulty passage of the stomach tube. When the hemorrhage is sudden and profuse, the patient may have pain as a prodromal symptom, which is relieved after the bleeding has taken place. In this type of hemorrhage marked anemic symptoms make their appearance, the severity of which depends upon the amount of blood lost. The patient becomes pale, faint, the extremities cold, the pulse weak and rapid, and may even go on to syncope or death. As a rule it is not the first hemorrhage that kills. In other cases there is a continuous loss of small quantities of blood, not enough to produce any severe symptoms, excepting that they have an anemic appearance.

Hemorrhage also occurs in other diseases, the most important ones being carcinoma of the stomach and cirrhosis of the

liver. In the former the bleeding is continuous, but small in amount and becomes mixed with mucus and particles of food, giving the coffee-ground appearance when vomited. In cirrhosis of the liver the bleeding comes from near the cardiac orifice of the stomach. It may be profuse and leave the patient in a more or less exsanguinated condition, while he or she may feel quite relieved after the hemorrhage; due to the removal of the congestion in the portal vein. Associated with this we have the other symptoms of cirrhosis, the history of heavy drinking (although not in every case), increased size of the liver, ascites, clay-colored stools, etc.

The gastric ulcer patient also complains of having eructations of a sour, burning character which sets the teeth on edge. It not only takes place during digestion; but even when the stomach is empty, which is due to the increase in the quantity of the hydrochloric acid; but more probably to the organic acids, as it has been found in many cases the free hydrochloric acid was not increased in gastric ulcer.

Cachexia becomes a prominent symptom, due to the lack of food, the constant loss of blood, and the severe pain to which the patient is subjected.

Constipation is present owing to the lack of food going through the intestinal tract.

Many other symptoms are usually present; but as they are the results of the primary ones no mention of them need be made here.

When we come to examine the gastric contents we find that the total acidity is increased, free hydrochloric acid increased, but in some cases normal; lactic, acetic and butyric acid absent, and usually the presence of occult blood. In gastric ulcer careful examination of the stool for many days may be necessary before the presence of occult blood can be detected, excepting, however, in cases where a recent hemorrhage has occurred a few hours before. In carcinoma occult blood is found almost continually. Too much stress should not be made upon finding blood, either after the removal of a test meal, or in the examination of the feces. In the former, the blood may come from a rupture or tear in the mucous membrane lining the esophagus or mouth; while in the latter, it may come from some abrasion in the intestinal tract resulting from the passage of hard fecal matter or the presence of hemorrhoids.

As to the sequelae of ulcer, perforation is perhaps the most

severe and dangerous. It may occur either in the acute or chronic stage. If the ulcer is on the anterior wall the perforation may take place into the peritoneal cavity, usually resulting fatally. If the ulcer perforates through the posterior wall the patient may develop a subdiaphragmatic abscess; or if the stomach is empty at the time, the perforation may be plugged by the omentum or other organs, with the formation of permanent adhesions. In the chronic form this condition always occurs sooner or later.

Another complication which may arise between the acute and chronic stage is hemorrhage, especially if from a large vessel. The patient showing marked symptoms of prostration, collapse and finally death.

Obstruction is a more common condition resulting from an old chronic ulcer, and occurs either at the pylorus or near the middle of the stomach, as an hour glass contraction. In the former, the local swelling and irritation in that area with the resulting inflammatory changes and cicatricial contraction, causes a decrease in the motility with the resulting delay in digestion. As the process advances the lumen of the pylorus becomes narrower and the stomach undergoes dilatation and compensatory hypertrophy. In rare cases a distinct tumor can be felt by abdominal palpation. In the latter case the stomach is divided, by cicatricial contraction, into two distinct parts. The symptoms of this condition are those of obstruction.

This brings us up to a consideration of whether carcinoma may develop from ulcer. We find that ulcer occurs in men at a later period than women, between thirty and forty years of age. Is it not plausible then to believe that an ulcer developing in a man of thirty-five may progress to a chronic form if not relieved by treatment, and then at the age of forty-five or fifty, become cancer. It is a well established fact that cancer is the most common disease in man at this age.

For treating cases of a mild or subacute form of ambulatory treatment can be used. This consists of a diet of soft foods especially milk and eggs, well cooked cereals, boiled rice, soups made from vegetables, a few of the soft vegetables that have been passed through a collender, as peas, rice, etc. Fine chopped meat can be given. The patient is to avoid all coarse and highly seasoned foods.

In the more severe forms the patient must be put to bed and at absolute rest. Nothing to be given by mouth except a little

water. Give an enema every three hours of peptonized milk to which has been added one to two teaspoonfuls of glucose. This is to be continued for two weeks, then liquids given by mouth, followed by a soft diet.

The Lenhartz treatment is of excellent value and is in constant use to-day in treating these cases with satisfactory results. This consists in giving the patient small amounts of albuminoid substances every hour, alternating them with cold milk and raw eggs. In five days chopped meat is added, on the seventh day rice, zwieback, etc., increasing the diet as the patient improves. Bismuth subnitrate ten to fifteen grains can be given three times a day with good results. Ice bags are to be kept constantly over the epigastrium for at least ten days. The great advantage of this method of treatment lies in the fact that the nutrition of the patient is kept at a higher level than one under ordinary diet.

In cases where there is severe hemorrhage the patient must be kept in bed and at absolute rest. The room is to be quiet and well ventilated. An ice bag applied to the epigastrium in an effort to arrest hemorrhage. No food to be given for twenty-four hours, after this feed per rectum until you are thoroughly convinced that the bleeding has become permanently controlled, usually not later than the fourth or fifth day. During the hemorrhage giving either 10 gtts. of adrenalin (1,000 solution) in an ounce of water every 15 or 20 minutes; or give hot gelatin one half to two ounces every one half to one hour has produced good results. If vomiting occurs discontinue the use of gelatin.

As to surgical interference in ulcers I do not believe to be necessary in the early stage, unless the symptoms become very severe, or after a rigid medical and dietetic treatment has failed.

As to medicines I will say nothing, leaving it to your own minds to determine whether they have any distinct action upon the progress of the disease.

The following I would think to be indications for operation. Ulcers which have produced mild dyspeptic symptoms over a prolonged period, and resulting in hæmatemesis. Chronic recurrent ulcers. In cases where hemorrhage is very severe. Perforation, either in the acute or chronic stage, demands immediate operation. And in cases where the symptoms of pain, vomiting, hæmatemesis, emaciation, loss of weight fail to disappear after the patient has been subjected to a thorough and modern method of treatment.

EDITORIAL

DR. MAYO'S ACKNOWLEDGMENT OF THE VALUE OF HOMŒOPATHY.

It is a source of satisfaction to those who have devoted the years of their professional career to the perpetuation and development of the principles of homœopathy to find that, at last, the work of Samuel Hahnemann is being recognized by the leading scientific physicians of our day at its true value and that homœopathy is fast assuming the leading place among the therapeutic procedures of the dominant school of medicine. It is true that several years ago, some of the leading therapeutists of the old school had begun to see the light, went so far as to say that the medical profession were under deep obligations to Samuel Hahnemann for his contributions to therapeutics. Only three years ago we read the very important and authoritative statement of Professor von Behring, who acknowledged homœopathy as the basis of his work on the anti-toxin of diphtheria and of all other serum therapy.

About one year ago, Dr. Richard C. Cabot of Boston, in his usual frank and forcible manner, referred to the debt of modern therapeutics to the teachings of Hahnemann and stated that, in his opinion, vaccine therapy was homœopathic in its action.

Perhaps the most important and noteworthy recognition of homœopathy and of Hahnemann's work, however, is contained in the remarks of Dr. Chas. H. Mayo, at the meeting of the American College of Surgeons recently held in Boston. Dr. Mayo surprised even the homœopathic physicians present by his laudation of the work of Hahnemann, who, he said, was at least eighty years ahead of his time. Dr. Mayo further stated it to be his opinion that the serum and vaccine treatment of today is homœopathic in its application and effect and that most modern methods of treatment are directly in accord with Hahnemann's ideas.

It is a well known fact that the dominant school of medicine has found its system of medical therapeutics crude and unsatisfactory in the extreme. Not only are their medical journals

full of articles voicing their dissatisfaction and scepticism of drug therapy, but their leading practitioners have invaded the lay press to such an extent that we can scarcely pick up a magazine or newspaper without finding an article by some eminent old school authority advising the public that: "there are but six drugs that have any remedial value:" "Throw away your medicine bottles:" "we have no medicine that will cure pneumonia, typhoid fever:" etc. It seems like a strange turn of fortune that, in the day when their traditional methods have failed the dominant school of medicine should turn to the methods and principles of Samuel Hahnemann whom they have so long held up to ridicule and scorn. It is not much wonder that only the big men of the old school are able to make acknowledgment of their debt to Hahnemann and to homœopathy and that the lesser lights should endeavor by subterfuge and by spurious explanations to avail themselves of the beneficent results of the homœopathic principle without acknowledging their indebtedness to homœopathy. So difficult is it for some to acknowledge the injustice of their attitude in the past that the *Boston Medical and Surgical Journal*, though reporting the proceedings of the Congress in detail, made no reference to Dr. Mayo's remarks. The homœopathic profession has a right to expect an adequate and just recognition of the work of the pioneers of homœopathy and of the scientific value of the principles for which they stood. No amount of political jugglery or of personal compliment can be accepted in lieu of such recognition. We do not ask favors nor do we need them. We do ask, as an organization, the acknowledgment of homœopathy as a scientific aid to therapeutics, and for the individual homœopathic physician, recognition on an equality with any other trained and ethical practitioner of medicine.

G. H. W.

SHOULD ATTENDING HOSPITAL AND DISPENSARY PHYSICIANS BE REMUNERATED?

THIS question is one that has been pushing itself forward during recent years and, we feel that from the standpoint of the physician, the hospital and the public, there can be but one answer, viz.,—that it is to the advantage of all concerned that attending hospital and dispensary physicians should be ad-

equately compensated for their time and services. In fact, we are convinced that it is the fault of the profession alone that physicians have not been placed upon regular salaries for this work long years ago. The average lay trustee recognizes the fallacy of the doctrine of "getting something for nothing," and if he has given the matter any serious thought, must have come to the conclusion that free medical service is not only an injustice to the physician but is largely responsible for the poor organization of many of our hospitals today.

The origin of free medical service in our hospitals can be traced to two factors, first, to the altruism of physicians which moved them to offer their services to charitable institutions whose funds were limited and which were dependent upon the voluntary contributions of charitable individuals; and second, to the desire of physicians to avail themselves of the educational opportunities of hospital and dispensary work.

Modern conditions have largely altered both of these factors. Our hospitals in the large cities are now conducted on business principles, largely from the income of endowment funds or from municipal or state appropriations. There is no reason why any physician should be asked to contribute his services to such institutions for charitable reasons and, if it were not for the fact that the idea of remuneration had scarcely even occurred to many such physicians, they would, no doubt, have received appropriate compensation long ago.

The second factor, which was dependent largely upon improper and inadequate training of physicians in the medical schools, has now largely passed away. The graduate of an up-to-date medical college has already received three years of actual clinical experience by the time he has completed his year of service as hospital interne and is entitled to immediate remuneration for his time and service. So much for the physician's standpoint.

When we come to consider the matter from the standpoint of the hospital, we can recognize the immense disadvantage of the present voluntary system. In the first place, few physicians can afford to give more than one or two hours daily out of their practice to dispensary work. Consequently the dispensary is open but one or two hours daily. During the remaining eight hours of the day the building, equipment and nonmedical staff are unproductive and consequently five dispensaries must be maintained to do the work of one properly organized insti-

tution operated eight or ten hours a day. The hospital too, under the present system, is scarcely in a position to criticize or to discipline the attending physician who is not punctual and regular in his attendance, nor are they able to insist on certain economies in regard to the use of drugs, surgical dressings and appliances that could very properly be carried out in organizations conducted on economic business principles.

As far as the public is concerned, the advantages of paid medical attendance at hospitals are so great that we will content ourself with mentioning really a few of them. The possibility of longer dispensary hours would obviate the necessity of men losing one-half or an entire day's wages in order to attend the clinic, which is frequently open only during working hours. The system of rotation of physicians which sometimes results in a patient being passed around from pillar to post, seeing one physician for a few weeks and then another physician, would be entirely done away with. Lastly, patients would not be subjected to the unpleasant trial of being treated by men whose knowledge of medicine is scant and who are merely holding their position temporarily for the purpose of securing experience from those who are unfortunate enough to come under their care.

Looked at from any standpoint, the system of free service by medical men as now rendered, is unjust, is wasteful and is responsible for a great deal of unnecessary expense on the part of the hospitals and a great deal of dissatisfaction on the part of the patients.

G. H. W.

PAPILLARY BLADDER TUMORS.—Here are two practical points that are quite trustworthy: the thicker the pedicle and the broader its point of attachment, the more likely is the growth to be not only clinically malignant, but histologically as well. And also the delicate, waving, fringe-like villi of benign papillomata are in marked contrast to the closely cropped, stunted villi of the papillary variety of cancer. Where a zone of brawniness is discernible at the point of attachment the growth is undoubtedly cancerous.—Clarence Martin, in *The Urologic and Cutaneous Review*.

GASTRIC ULCER AND HEMORRHAGE.—Hematemesis is of more frequent incidence than melena, wholly irrespective of the place occupied in the stomach wall by the peptic ulcer. It is interesting to observe, however, that melena only may occur with ulcers located on the lesser curve or pars media. In general, however, melena alone means that the ulcer is situated well toward the pylorus. On the other hand, hematemesis alone may occur with an ulcer located in any position.—Frank Smithies, in *Interstate Medical Journal*.

GLEANINGS

THE OGILVIE METHOD OF TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.—Stoner (*Cleveland Medical Journal*, June, 1915) notes that the method of Ogilvie consists in salvarsanizing blood serum in vitro of a known strength. The technique briefly outlined is as follows: Approximately 60 Cc. of blood is withdrawn, and, after allowing to stand for a short time at room temperature, is centrifugalized, which should give a clear serum absolutely free from hemoglobin and blood cells. To 15 Cc. of this serum is added 0.25 to 1.0 mg. of freshly prepared solution of salvarsan, made in the usual manner, taking 1.0 dg. of salvarsan to 40 Cc. of distilled water. One should exercise care in not adding an excess of sodium hydroxide, only carrying the solution to a very faintly alkaline reaction. After mixing thoroughly, it is subjected to a temperature of 37° C. for forty-five minutes, and then 56° C. for thirty minutes. This should be injected not later than three hours after its preparation.

The lumbar puncture is done in the usual manner: 15 Cc. of cerebrospinal fluid removed and 15 Cc. of the salvarsanized serum introduced gently by gravity, by connecting up a container such as the barrel of a Luer syringe. The patient should remain absolutely flat in bed for twenty-four hours.

In the sixteen cases treated with a total of forty-two injections, no untoward symptoms arose (save pain in approximately 50 per cent of the cases, which generally required no means of relief and passed off in twelve hours.) Head pains do not occur, as is common following lumbar puncture, and the pains associated with the condition are generally completely relieved in two or three days. After twenty-four hours they generally suffer no or very little discomfort and are able to work. In only two cases were the pains very severe, and these were cases of tabes, in which .75 mg. was given. The treatments have been repeated every two weeks, and in cases with positive blood stream to the Wassermann an intravenous 0.3 gm. salvarsan was given a week subsequent to intraspinal treatment.

The cases treated give peculiar interest inasmuch as a number of them have had intensive intravenous salvarsan therapy and some mercurial therapy over a period of two years.

Cases of cerebrospinal syphilis have lost their pains, deep reflex disarrangement, and show decided changes in lumbar puncture findings. Early the cell counts are brought to normal, but the Wassermann and Lange globulin tests persist more or less to a degree of positiveness. The sensitivity of the Lange globulin test and its behavior toward syphilitic and non-syphilitic globulin make it an extremely interesting check on the study of the fluids subsequent to each intraspinal injection. A few times they have been observed, on examining the fluid two weeks subsequent to an intra-

spinal treatment, that the Lunge globulin test gives a non-syphilitic curve, which is no doubt evidence of the presence of a blood globulin from the previous treatment.

Early cases of paresis treated intensively show marked improvement, both mentally and physically.

Two cases of tabes with Charcot joints lost, following intraspinal treatments, their last remnant of pains, that had persisted after intensive intravenous and mercurial treatment. It is striking to observe the loosening of the tight pupil, the lessening of ataxia, the disappearance of crises, and the general improvement of the mental and physical state.

Three facts have been definitely established: (1) That the lumbar puncture is the most valuable diagnostic means in determining the presence of a nervous syphilis, giving evidence in practically 100 per cent of the cases in which the blood stream is often negative. (2) That there is practically no contraindication for intravenous salvarsan treatment of syphilis; that if intensively and judiciously employed, it is the best means at our command in the hope of clinically curing general syphilitic manifestations. (3) That intraspinal treatment is an adjunct in the management of syphilis of the central nervous system that gives us new hope.—*Therapeutic Gazette*.

ENURESIS.—In a report on progress in pediatrics Smith and Eustis (*Boston Medical and Surgical Journal*, July 22, 1915) define enuresis as a lack of bladder control after the third year. It is a symptom and not a disease, and should lead to an examination for retarded mental development, local malformations, ulcer at the meatus, phimosis, vulvitis, renal or bladder stone, tuberculosis of the bladder, threadworms, or anal fissure. Bogert regards it as a functional nervous disorder dependent upon chronic digestive disturbances. He analyzed the histories of 50 cases and noted "practically without exception gross errors in feeding." Consequently he restricts his treatment to the regulation of the diet and the general hygiene, the only drugs used being laxatives and intestinal antiseptics. He gives no figures, but says he has obtained "a fair percentage of cures."

Schwartz, after a study of 246 cases, writes that "a review of the records does not bear out the assertion that chronic digestive disturbances are more frequent in cases of enuresis than in other patients." He also found "no connection between the tonsils and adenoids and the enuresis." "The degree of acidity of the urine bore no relationship to the severity of the incontinence," and although 70.9 per cent of the specimens examined were acid, "the urine frequently varied in reaction on different visits" without any change in the symptoms. "Neither do the hemoglobin estimations point to anemia as an associated symptom." He found the following abnormalities of the genitalia: redundant prepuce, preputial adhesions, phimosis, hypertrophied clitoris: and the following under the head of the central nervous system: nervous tic, chorea, imbecile, retarded mentality, indistinct speech, somnambulist, pavor nocturnus. He has nothing new to add to the treatment. In no instance did the customary hygienic and dietary measures effect a cure. The administration of atropine or thyroid was useless and alkalies seemed of doubtful value.

THE PHYSICIAN AND THE DEFECTIVE.—The physician's duty is to save life, never to terminate it. The idea that the attending physician should lift all defective children at the time of birth that bid fair to be hopelessly handicapped in later life and possible burdens on their families or society is contrary to every principle of medicine or humanity. To begin with, it assumes a right which even if proper to exercise—a premise by no means established—calls for a degree of foresight and prognostic ability that no physician can rightfully claim today. The chances for mistake are greater than most conscientious men care to take. Finally, the adoption of the suggestion would pave the way for abuses and the development of evils so much worse than those arising under our present custom of letting Nature take its course, that sooner or later mankind would find them intolerable.

No, the whole proposition is abhorrent as soon as one considers the question in its broad general application instead of in its relation to some specific case. It is true that individual instances may occur when the maintenance of life seems a mistake, a needless perpetuation of distress and suffering. Nature, however, usually solves these problems herself, but in the few instances in which she fails, better by far that the physician should be a party to the mistake of saving a few helpless defectives than to the crime of hastily destroying innumerable lives with their unknown possibilities.

It seems, then to be the consensus of medical opinion that each case of serious congenital defect is an individual problem which the attending physician must solve according to the dictates of his judgment and conscience. If operative treatment seems futile—or simply offers the temporary prolongation of life—it is his right, nay often his duty, to refuse to perform it. In no way can he be held responsible for the subsequent death of such a child. If operation, however, offers the slightest prospect of saving the child's life, he is duty bound to perform it. He may thus be responsible for saving a few helpless defectives, but there are few physicians who would not rather carry this responsibility than to assume that of blotting out a single human life with its unknown possibilities. We say "unknown possibilities," for it is a fact that no one can foretell the future of a defective infant whose condition permits of a fairly normal physical existence. Every physician of experience has seen cases apparently hopeless that suddenly have undergone the most remarkable change and been restored to a practically normal condition. The things we are learning every day in regard to the internal secretions, especially their latency and responsiveness to various activating influences, lead us to expect such results much more frequently, and thus rob many of these cases of their seeming hopelessness.

Some one has said that "the miracles of today are the commonplaces of tomorrow." It is in this rapidly changing order—the development of knowledge and the ability to cope successfully day by day with more and more of the conditions that have seemed beyond our powers—that we find the best possible answer to the demand that medical men should destroy every hopeless defective. We believe we express the universal sentiment when we say the medical profession has no intention of taking any such course.

To-morrow there may be no hopeless defectives!—*Editorial in Amer. Medicine.*

LABORATORY METHODS IN THE DIAGNOSIS OF CANCER.—Much progress has been made in our knowledge of the chemical changes which occur in persons with malignancy. Experimental investigations have continued for many years, but, many secrets are still withheld from us. Laboratory investigations have done a great deal to advance the diagnosis of early malignancy but we are forced to admit that not a single one of the specific diagnostic methods known by us at the present time gives conclusive evidence. No one method can be suggested as an absolute proof, but in combination with other methods they become valuable adjuvants in the diagnosis of early malignancy. Many of our tests aid in the recognition of the late cases but these are inoperable. The aim of the research worker is to find some practical method which can readily be performed by the average pathologist and which will give evidence of malignancy in the curable stage. The cry of the surgeon is that internists do not send the patients for operation while they are in the operable stage; the cry of the internist is that patients do not come to them until they are so far advanced that one cannot be mistaken in the diagnosis, without the aid of the laboratory. To remedy this the public must first be educated in consulting the internist early and then we must find reliable methods of differentiating the benign from the malignant growths. For these methods of diagnosis we must look to the laboratory. Laboratory methods are still in the experimental stage so we cannot be satisfied with any one test but must use every possible means at our command. With the efforts expended in research we can feel reasonably certain that the next few years will bring the specific diagnostic methods of malignancy and with it possibly the solution of the cancer problem.

What are the methods of diagnosis at our command at the present time? If we are to make the early diagnosis we must be familiar with present known methods and we must be able to give the proper interpretation to these methods. Careful technique and correct interpretation are important in every examination.

Where tissue is available sections may be made by the pathologist and thus an early diagnosis made. Malignant growths in locations other than the surface presents a more difficult problem. For these we require chemical and biologic tests. In the urine two chemical tests have been tried. The increase of oxypoteids in the urine in cancer seems to be a constant phenomenon in the hands of Salomon and Saxl. In cancer of the stomach Wilenko has shown that there is an increase of pepsin in the urine, while the pepsin in the stomach is either absent or very much decreased. Both of these tests have been confirmed by some observers but they are not widely accepted as offering anything specific in the diagnosis of cancer.

Of the biologic tests there are seven which might be considered. These are as follows:

Miostagmine reaction of Ascoli and his pupils.—This reaction is based upon the laws of physiological chemistry, by means of which we are able to identify antibodies in the serum of the individual tested. Ascoli and his pupil Izar examined 62 cases of cancer and were able to obtain a positive miostagmine reaction in 58; comparing them with 48 other diseases, all were negative. Many Italian workers, as D'Este, Stabilini, Agostini,

and a host of others, have corroborated these findings, obtaining also 90 per cent. positive reaction and look upon it as specific and characteristic diagnostically.

Complement-Fixation test.—This was attempted but the results showed so much variation and inconsistency, that not much value could be attributed to it.

Precipitin reaction (Freund and Kammer.)—This cell-destroying seroreaction test is not entirely specific but is of value in at least 75 to 80 per cent. of cases, and is, therefore, of assistance in diagnosis when other methods are of no avail. The technic is simple except for the difficulty of obtaining the cancer cell material, as the cells of many cancers are not dissolved by normal serum, which is the basis of the test.

Brieger's antitrypsin reaction.—This test is based upon the theory that normal blood serum contains sufficient antibodies to inhibit the digestive action of a one per cent. solution of trypsin on Loeffler plates in the proportion of one to three. The inhibitory power of cancer serum was shown to be markedly increased, ranging from one to twenty. The positive reaction is questionable for cancer because it is positive in about 52 per cent. of other than cancer cases; only 5 per cent. of cancer cases fail to show the reaction so that the negative reaction has an important bearing and is of value as indicative of non-malignancy, especially when a differential diagnosis does not enter into consideration.

Crile's Hemolytic test.—Blood serum (or cancer extract) of cancer patients exerts lytic power upon human red blood corpuscles, and the same phenomenon is observed in hemorrhagic transudates of cancerous affections. It is positive in 82 per cent. of cancer cases but as it is also positive in tuberculosis, infectious diseases, pneumonia, and pernicious anemia, its specificity is out of the question.

Cobra Venom test.—This test has not yet reached a practical stage.

Abderhalden's test.—The basis of this test depends on the fact that when foreign proteins get into the blood, the body reacts by elaborating a ferment which causes their disintegration. The same reaction is believed to occur under the influence of certain peculiar protein substances derived from the organism itself. As elements from the placenta pass into the maternal blood, the serum acquires the power to digest placental tissue. This power is believed to be present only in pregnancy, and Abderhalden's test for pregnancy is based on this principle. It is asked if it is not possible that in cancer analogous reactions occur so that the serum of cancerous patients may be able to digest cancerous tissue? If this be true then the detection of the products of such digestion would be a means of specific diagnosis. For a time this test was enthusiastically accepted but it has now passed into the stage where it is being assailed on all sides. The exact value of the reaction is still to be demonstrated and it would be well perhaps for the physician not to place too great reliance upon the results of the test even though it be performed in the most reliable laboratories.

The diagnosis of cancer of the stomach is still very difficult. Many gastroenterologists disagree on the interpretation of the findings of gastric analysis. The literature is full of the inconsistencies encountered in routine gastric testing and strange results, often times in discord with

clinical symptoms, have caused the clinician to rely less and less on the examination of the test meal as an index of gastric function. It would seem from all this confusion that the results of the findings depend upon having a standard and uniform method which suits the worker, careful technique, good interpretation and the correlation of the laboratory, clinical and operating. At present we have no laboratory test which is absolutely conclusive of gastric cancer, but, we have some findings which, when properly interpreted, help us to make at least a tentative diagnosis and will suggest operative interference.

Coffee colored or dark brown gastric extracts are not of any value except in late inoperable cases of cancer. The dead white color of the gastric extract, associated with markedly absent chymification, is a characteristic finding in the hands of Smithies. He also states that "other things being equal, in a given case of free HCL associated with an increase in total acidity, with the development of obstruction and the demonstration of organic acids, speaks for malignancy."

Occult blood is a valuable finding but does not differentiate malignancy from ulcer. Organic acids are rarely demonstrated in non-retention cases. In partial stenosis and gastric dilatation lactic acid is frequently found. "93.8 per cent. of all proved cases of late cancer, organisms of Boas-Oppler group, associated with food retention and acid averaging below 10, was a characteristic picture (Smithies)".

The following tests deserve some comment:

Salomon's test.—Of the reactions in the gastric contents, Salomon's test has proved valuable, frequently disclosing the presence of an ulcerating gastric cancer, when all other signs had failed. A few benign ulcers give the reaction too. Saxl commends this simple technic, of estimating nitrogen in the contents of a fasting stomach, as indispensable in dubious cases. Negative findings have no significance, while the positive ones are of value.

Neubauer and Fisher test.—This is a glycytryptophan splitting test and is quite impracticable at present because of the many sources of error.

Passive Anaphylaxis test.—This test has been proven uncertain.

Wolff-Junghans' test.—This test is based upon the demonstration of dissolved albumin in gastric extracts. When carefully performed and interpreted it is positive in about 80 per cent. of cancer cases. Smithies finds it a "more constant finding in gastric extracts than absent free HCL, the presence of lactic acid, and the glycytryptophan test. It was rather more constant than tests for occult blood and the demonstration of gastric motor inefficiency. It was not so consistent in its manifestation as the demonstration of organisms of the Boas-Oppler group or the increase in the formol index. In the differentiation between malignant and non-malignant achylia the Wolff-Junghans' test, when interpreted in connection with other clinical and laboratory data, is of considerable value (Smithies.)"—*Charlotte Medical Journal*.

THE MEDICAL TREATMENT OF GASTRIC ULCERS.—Johnson in the *Saint Paul Medical Journal* for June, 1915, writes on this topic. To sum up, he would advance the following propositions as a basis of treatment:

First. Consider every case of gastric ulcer as a severe case, for any mild one may become severe in an hour's time.

Second. Entirely abandon the ambulatory treatment. Absolute rest is just as important in the case of a gastric ulcer as it is in the case of a fractured femur.

Third. You must diagnose ulcer much more frequently than heretofore, and must make a more thorough and much longer search for complications and sequelæ, insisting upon having cases under observation for ten days where there is any doubt whatever. The surgeon must be called much oftener and quicker than he has been heretofore. No pains must be spared in looking for indications for operative measures.

Fourth. The writer would add to the indications for surgical intervention hypersecretion and constant findings of either free or occult blood in the stools after a month of the Leube rest cure. Other important indications are: severe continued pain, chronic invalidism, and uncontrollable vomiting.

Finally, the writer quotes the words of Bassler:

"It must nevertheless be remembered by the internist that to be too conservative, and drift aimlessly along until conditions have passed beyond the hope of surgical cure before the case is handed over, is quite as bad a practice as the engaging in hazardous operative exploitation and frenzy, without previously knowing just why, or estimating the loss and uncertain gain.

"Each case that is seen is a law quite unto itself. This fact must be observed on both sides, the surgeon often standing somewhat in the rear until it is apparent that an operative course is the wisest to pursue."

CANCER OF BREAST.—G. E. Pfahler (*Inter. Med. Jour.*) writes of

1. There is a tendency to recurrence and metastases of carcinoma of the breast in at least 20 to 25 per cent. of the cases, even with the earliest operations, and in those in which there has been glandular involvement, there is a recurrence in at least 75 per cent. of the cases. Therefore, it is our duty to use every means at our command that gives promise of an increase in the number of cures.

2. Since definite recurrences and metastases, following carcinoma of the breast, can be made to disappear by means of roentgenotherapy, it is reasonable to expect the disease to disappear at an earlier stage immediately after operation, when only a few isolated cells or a beginning infected gland remain.

3. Efficient and thorough treatment in the early cases will probably increase the percentage of ultimate recovery from 75 to nearly 100 per cent.

4. Thorough massive dose treatment by cross-firing methods may be expected to accomplish more than has been previously accomplished by the older methods.

5. Patients should be kept under observation for several years, and at the earliest sign of recurrence they should be subjected to a thorough course of deep roentgenotherapy.

EARLY DISINFECTION OF WOUNDS.—By Tuffier (*Bulletin de L'Academie de Medecine*).—All wounds must, in military practice, be considered infected, and to this circumstance chiefly are due their serious nature, the protracted period of treatment required, and complications such as neuritis, osteitis, troublesome cicatrices, etc. Stress is laid on early disinfection as the most efficient means available of lowering mortality in these cases. This disinfection should be affected as a first aid measure behind the firing line. After application of tincture of iodine to the skin surrounding the wound, the surgeon, wearing sterile gloves, should irrigate the wound, superficially as well as deeply, with Dakin's sodium hypochlorite solution, explore the wound very cautiously for foreign bodies, open up the wound further, if necessary, and excise dead tissues. The dressing should be that recommended by Carrel, which has for its purpose to keep Dakin's fluid constantly in contact with all parts of the wound. One or more rubber tubes, six mm. in diameter, and long enough to pass entirely through the dressing, are inserted in the deepest recess of the wound. A compress previously dipped in the solution is rolled around the tube, if distention of the wound is required. A layer of sterile cotton is placed over the wound and around the limb, and the whole maintained with a loose bandage. Into the tube, which projects by five or six cm. through a small hole in the cotton, five or ten c. c. of Dakin's fluid, according to the size of the wound, is injected with a small rubber bulb every hour. The cotton is carefully changed each day. Under this treatment, discharge is limited to a clear, gummy liquid. There is no suppuration or odor, and the temperature rises little or not at all above normal. When the temperature has been normal a few days and the wound is in perfect condition, it is partially closed with an adhesive and healing follows. Results better than any previously noted were obtained with this treatment.—*N. Y. Med. Jour*

ERRORS IN DIAGNOSIS OF RENAL AND URETERAL CALCULUS.—H. Cabot. (*Surg., Gynec. and Obst.*, 1915, XXI, 403.)

The author in a study of 153 cases of stone in the kidney and ureter, found that twenty-six abdominal operations had been performed without relief; having overlooked a renal or ureteral calculus.

The operations in order of frequency were appendectomy, exploratory laparotomy, nephropexy, cholecystectomy, capsule stripping and the crowning mistake of a supra pubic cystotomy on a normal bladder.

In thirty-five cases the type of pain was not at all suggestive of stone in the kidney. In twenty-one the urinary findings were repeatedly normal. In eight X-ray findings were negative, external pressure upon the ureter, causing partial stenosis, the result of calcified tuberculous glands of the mesentery; being mistaken for stone in the ureter in two cases.

The author concludes that in all cases of chronic recurring abdominal pain, backache, lumbo-sacral strain, frequency with painful micturition all diagnostic means available should be used, namely, repeated examinations of the urine, ureteral catheterization including use of wax tipped catheter, stereopticon and injected radiographs.

J. G. Spackman.

CHOLECYSTECTOMY AND CHOLECYSTIC TOXEMIA.—W. W. Babcock. (*J. Am. M. Ass.*; 1915, XLV, 1428.)

The writer divides the infection as to mode of invasion, into four types:

1. Portal, bacteria entering the portal circulation through the alimentary tract.
2. Ascending infection through the cystic and common ducts by way of the ampula of Vater.
3. Hematogenous, by organisms existing in the general circulation, septicaemia, bacteraemia.
4. From nearby infection or inflammation.

He divides the chronic types of infection into three classes:

1. Cases which present only remote reflex toxic symptoms with absence of local findings; stage of cholecystic indigestion.
2. Those in which recurrent, paroxysmal attacks of pain are caused by inflammation, or movements of calculus.
3. Gangrene, empyema, perforation, common duct obstruction and acute pancreatitis.

The symptoms are grouped under the following headings: Digestive, intestinal, peritoneal, arthritic, cardio-vascular and fever.

Evidence of gall bladder infection are evidenced by changes in size, color and thickness of the walls; (2) presence of adhesions; (3) enlargement of lymphatic nodes at junction of common and cystic ducts; (4) alterations in color and consistency of bile; (5) alterations in mucosa.

The author concludes: (1) that cholecystectomy is the operation of election in the first two classes, owing to the persistence of the infection in the cystic mucosa; (2) that cholecystotomy should be performed in the last type; (3) that the high mortality of cholecystectomy is due to poor selection of cases and imperfect technique as puncture of common and hepatic ducts, incomplete closure of common duct by ligature, etc.

J. G. Spackman.

NEW METHODS OF PYLOROPLASTY FOR CONGENITAL PYLORIC STENOSIS.—A. A. Strauss. (*J. Am. M. Ass.*; 1915, XLV, 1533.)

Strauss believes that the operation of posterior gastroenterostomy has been the procedure of election by many, is due to the remarkable results of H. M. Richter and Charles L. Scudder who have made an especial study of its technique in these cases.

He believes that the time required by the average surgeon is too great a shock to the already debilitated infant.

He bases his operative procedures upon the pathological conditions present, which are:

1. Small amount of muscular hypertrophy with complete obstruction.
2. Large tumors causing complete obstruction.
3. Large tumors which cause partial obstruction.
4. Small amount of muscular hypertrophy with partial obstruction.

Technique:

Hypertrophied pylorus delivered through one-inch incision along the

outer border of right rectus. Longitudinal incision over tumor down to mucosa. Dissect out and evert hypertrophied musculature. Divide everted muscle tumor into two layers of equal thickness. Evert muscular flap thus made and treat opposite side same way. Suture everted edges. Suture transplant from great omentum over raw surface of pylorus.

When hypertrophy is marked, evert mucosa and remove inner layer of newly formed muscle flap.

The author concludes that the following points are of advantage over the common operation:

1. Smaller incision.
2. Less time, therefore less shock.
3. Pathological pylorus reconstructed into normal one.
4. Anatomic relationship between stomach and bowel preserved.

J. G. Spackman.

DISPLACEMENTS OF THE FEMALE GENITAL ORGANS.—Bonney (London) divides the supporting apparatus of the genital canal into upper, middle and lower, and each of these groups of ligaments may be relaxed separately or in combination with others. If the middle group, that is the utero-sacral and the lateral cervico-pelvic, is relaxed, an inversion of the vagina with elongation of the cervix results while the uterus itself has not changed its position. Such cases are often improperly designated prolapse of the uterus. In regard to the treatment of displacement of the internal genital organs it must be accurately determined which of the relaxed uterine supports requires to be strengthened. Thus in relaxation of the middle and lower groups it is not possible to restore the function of the latter, which is composed of the muscles of the perineum, solely by means of a caepoperineorrhaphy, but the sacro-uterine ligaments and the lateral cervico-pelvic ligaments must also be shortened by way of the vagina. Ventro fixation is often of no use in vaginal inversion or eversion, since because of resistance of the broad ligaments the uterus cannot be sufficiently drawn up. Another mistake is the extirpation of the uterus in procedentia, since the uterus may be utilized in combination with perineal repair and shortening of the ligaments.—*Abstr. Zentralbl. f. Gyn.* 1914—1336.

THEODORE J. GRAMM, M.D.

RETROCECAL APPENDICITIS.—Bosham (Kansas) says in this form of appendicitis the inflamed organ is found lying outward and behind the cecum, is usually very long and exceptionally the appendix is found extra peritoneal. The diagnosis is quite difficult. The McBurney point cannot be used in diagnosis, the pain is more diffuse, radiating outward; muscular rigidity is absent in the early stages, but later affects the entire right side. Even when an abscess has formed its boundaries are so illy defined and the site of the swelling is so atypical that the diagnosis is materially obscured. This disease must be differentiated from pyonephrosis, renal abscess, perinephritis and purulent cholecystitis. Leucocytosis would of course suggest a pus focus, but would not necessarily point to the appendix. Albumin is frequently found in the urine in this disease. In operating, the incision must necessarily be quite atypical. If possible the appendix should be removed since fecal fistula may easily develop.—*Abstr. Zentralbl. f. Gyn.* 1914—1475.

THEODORE J. GRAMM, M.D.

Monthly Retrospect

OF HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

CONDUCTED BY DR. DONALD MACFARLAN
PHILADELPHIA

ACONITE.—Aconitum belongs to the natural order of Ranunculaceae, which embraces a large number of genera and species of plants, most of which are characterized by irritant properties, due to some free organic acid; though many members of the order have no acid. These are the uncombined members owing their respective properties to one or more alkaloids or glucosides. Some again, occupy an intermediate position, possessing both free acid and alkaloid. The extreme "acid" end of the series may be represented by ranunculus, paenonia, hydrastis, anomone (pulsatilla) and clematis; the extreme "alkaloid" division by delphinium, aconitum, helleborus, coptis, nigella and etc.

The genus Aconitum embraces about twenty species, which differ almost as much from each other as do the various members of the whole order. Some species are very rich in aconitic acid, especially those species allied botanically to *A. napellus* (*A. ferox*, *A. chinense*, *A. neomontanum*.) Others have little or no acid, though considerable alkaloid (*A. anthors* and *A. lycoctonum*.) The tuberous roots of the latter are eaten by the Laplanders, in spite of the large amount of alkaloid contained in them. All the above mentioned species contain aconitine, or an allied alkaloid, and are poisonous; their poisonous property seeming to vary directly with the percentage of alkaloid.

A. heterophyllum contains no alkaloid, and no free aconitic acid. It has, however, a bitter principle, and is used in India as a tonic and refrigerant, in doses of 20 to 30 grains of the powdered root, repeated every three or four hours.

The species containing the largest amount of alkaloid are, in order: *A. willdenowii*, *A. tauricum*, *A. bernhardianum*, *A. ferox*, *A. chinense*, *A. napellus* and the *A. stoerceanum* and etc. These are all blue flowered. They are more or less related to the *napellus*, and more poisonous than the species allied to the *A. variegatum*—namely, *A. paniculatum*, *A. heterophyllum* and etc. In North America we find *A. uncinatum* and *A. rostellatum* in the middle and southern states; *A. fischeri* in the Rocky mountains, *A. kamtschaticum* and *A. napellus* in British America. The *A. uncinatum* which grows in Virginia contains an alkaloid similar to aconitine, and produces effects similar to those caused by *A. napellus*.

Very little, really, is known about aconitic acid. It has caused restlessness in animals, and blisters on mucous membranes. It is found not only in some species of aconitum, but also in delphinium, coltsfoot, helleborus, adonis, squill, thuyatilla, and achillea millefolium. It differs,

both chemically and physiologically, from anemonic acid. The latter is the active principle of anemone (*pulsatilla*) *pratensis* and *nemorosa*, *ranunculus bulbosus*, *secleratus* and *flammula*.

The alkaloids of the various species of *aconitum* have been studied by numerous chemists with varying results. It seems certain that there are two distinct alkaloids—aconitine and pseudo-aconitine. In *A. ferox*, the alkaloids are associated in a proportion of about 94 per cent of pseudo-aconitine, to 0.6 of aconitine. In *A. napellus* and *stoerkianum*, aconitine largely predominates, with but a trace of pseudo-aconitine. In *A. lycoctonum* there seems to be less disproportion between them. The action of the two alkaloids seems identical, except that pseudo-aconitine is much more violent and V. Schroff asserts that it produces no facial neuralgia. Pseudo-aconitine is supposed to be the most poisonous substance known.

The following effects are characteristic of aconitine, and must be present in a greater or less degree in the provings of all substances which contain it.

- (1) Tingling and numbness, commencing at the lips and tip of the tongue, and spreading over the whole body.
- (2) From larger doses, heart's action is slow and feeble; from smaller doses, heart's action first rapid, then slow.
- (3) Anxiety, sometimes distressing.
- (4) General exhaustion, amounting almost to paralysis.
- (5) Temperature lowered by large doses, elevated by small.
- (6) Lancinating or drawing tense pains, especially in the *nervus trigeminus*. This is not noticed in the *A. ferox*.

These effects, given in the order of appearance, are of necessity general, but the anxiety, is most prominent and uniform; sometimes the prover suffers from excessive prostration, but is still anxious, even if not restless, restlessness seems not to be caused by the alkaloid, nor by *A. lycoctonum*. The tingling is such a uniform primary effect, that pharmacutists are in the habit of judging of the value of a tincture by its severity or prompt appearance after tasting. Having now a general idea of the effects of the alkaloid, let us turn to a consideration of the provings of the different species of *aconitum*.

Aconitum anthora. Here, we find a proving by one of von Schroff's pupils, without doubt genuine. Note the peculiar symptom "sleepiness and deep sleep through the whole body." By comparing this finding with Petroz's provings of *A. lycoctonum*, in which also we find "drowsiness" and "sleeps too long," we realize that these two species contain no free aconitic acid, which seems to cause restlessness.

A. cammarum. Here we find "sleepiness," but "such restlessness that he wandered about the room as if crazy." Did we not know the difference in the constituents of the species of *aconitum* we might conclude that, if the prover of *A. anthora* or *lycoctonum* went soundly to sleep and slept off the proving, there must be some mistake about it. The full account of Schroff's provings of *A. cammarum* is exceedingly interesting. Let us note particularly:—

- (1) The pulse became rapid within a few minutes, then it fell to 40 (in four hours). In Professor Schroff it became very weak and irregular. In both provers the weak pulse was associated with great prostration,

stomach, coldness of the feet, vertigo on attempting to rise or move.

(11) Epigastralgia.

(12) Tremor.

(13) Spasmodic, trembling from lips and tongue.

(14) Respiration.

(15) Increased secretion of urine.

(16) Increased salivary on the lip, and desquamation.

Stoerkianum is the same as *A. stoerkianum*, used by Hahnemann as a substitute for aconite.

A. Toxicum.—This modification of this wonderfully powerful plant is found in Hahnemann's heroic and indefatigable class of provers.

(17) Anxiety, more distressing than any other aconite.

(18) Violent burning in mouth, pharynx and etc.

(19) Eupnoea dyspnoea; "could not lie down; he feared paralysis of the neck."

(20) Muscular contraction.

(21) General restlessness; "he could not possibly lie more than a few minutes."

(22) Tremor and formication; "tongue insensible"; "he seemed to walk on woolen carpets" and etc.

(23) The coldness of the body; at first, skin cold and dry, then "color faded" with copious sweat.

(24) Profuse diuresis.

THE SINGLE REMEDY.—From Dr. Edwin J. Fraser.—One of the sweeping reforms of Hahnemann was his advocacy of the Single Remedy. In the old and ruinous Polypharmacy was rampant. Fifty, sixty, seventy, and even more ingredients were compounded into one prescription, and, utilizing the wholesale bloodletting of that lamentable era, there came into being in the mind of anyone nowadays, that those far-away medical theories were decidedly out of joint.

The Single Remedy was first used by Hahnemann in contra-distinction to the old, ruinous mixtures of all kinds of incompatible drugs and remedies, as employed by the old school, instead of those which have a common action for each other and for the diseases sought to be cured, and they acted together in true atomic proportions. It is evident that Hahnemann had this distinction in view, for many of the remedies which he used and used were composed of one or more distinct elements, to be united, not in a chemical union of lime with carbon.

Distinctions, the reaction with hydrogen, oxygen, nitrogen and carbon, and the union chemically with almost all the metals, and the various combinations of distinct chemical combinations. Mercurius dulcis, the mild mercurial, differed from mercurius dulcis, the mild mercurial, differed from the more caustic chloride, the so-called mercurius sublimatus.

In Hahnemann's *Organon*, we find about seventy chemical combinations, each of one or more elements, that are classed as single remedies. In the continuation of that work, a large number of new remedies were added, which increase immensely the number of remedies, and in the way of a definite path-

ogenesis. But the greatest and most remarkable list of substances of definite composition are made up of the four elements—hydrogen, oxygen, nitrogen and carbon. In fact, almost all poisonous alkaloids are composed of them in differing proportions, and although they are singly, comparatively harmless, in combination they form the greatest variety of useful and destructive compounds. Of such, are the well known alkaloids, such as aconitine, morphine and cocaine. Their poisonous qualities are all well known by the profession.

Water, the most common and useful, is simply a combination of two gases, oxygen and hydrogen. Put them into a receiver in a cold state, and they will remain separate indefinitely. Send a spark through them, and they will immediately unite with a bang. Hydrogen is the most inflammable of all substances, while oxygen is the best supporter of combustion, but chemically united they form water, the most suitably available common substance to extinguish fire. Thus it may be seen, how tremendously different and how tremendously important each substance by itself must be. Each substance has a definite being both as regards its substance and its sphere of affecting bodily function and structure, and the latter will always be apparent in the dynamized state, even despite the fact of inertness in the crude, which sometimes does exist.

It is really astonishing to witness the prompt and certain effects produced by a single dose of ipecac, 3x to 6x, in diarrheas associated with nausea and vomiting; also of mercurius corrosivus in bloody dysenteries with severe tenesmus. Cuprum 30th will stop cramps in the legs almost immediately, and in the case of sleeplessness with a desire to keep moving ignatia is splendid. Colocynth, from the 3rd to the 6th will almost invariably cure a case of colic in man or beast, where the tendency is to bend forward and draw up the legs. Aurum is wonderfully efficient in cases that desire to commit suicide. Taken internally in the dynamized state it does more good than when the crude article is put into the patient's pocket; although the latter helps wonderfully sometimes.

THE RELATION OF DRUG TO BLOOD CHANGE.—*Aconitum Napellus*.—It exhibits no blood change; not indicated in diseases characterized by blood change.

Antimonium Tartaricum.—Oxygenating powers lost; in turn destroys the fibrin factors. Corresponds to capillary bronchitis, small-pox and pneumonia.

Arsenicum Album.—Alters the red and white corpuscles and destroys the fibrin factors. Corresponds to general tissue decomposition, anemia, and anasarca effecting vaso-motor paralyzant of either circulation.

Baptisia Tinctoria.—Destroys the red corpuscles and fibrin. Corresponds to the toxemia of typhoid fever.

Bryonia Alba.—Degeneration of the red and white corpuscle. Corresponds to the infiltrations of typhoid, remittents and intermittents, and some of the eruptive fevers.

Carbo Vegetabilis.—Disorganizes the red corpuscle, causing sepsis identical with that of low grade ulcerations and putrescent inflammations. Often of signal service to the older Hahnemannians in clearing up chronic disease after-effects.

Cinchona Officinalis.—Destroys the white blood cell; decreases the size and number of erythrocytes and increases the fibrin. Peruvian or Jesuit bark has its analogue in the anemia of malaria and hemorrhages. The wine of the bark was at one time used by Hahnemann himself as a prophylactic agent against the acquisition of contagious disease, after exposure from the same. Like vegetable charcoal also of service in clearing up after-effects of a long drawn out chronic disease.

Calcicum Autumnale.—Degenerates both the red and white corpuscles, the vital fluid becoming the medium for the non-elimination of the urates.

Oxford, November 11th, 1863.—*Doctor A. von Lippe*—*Dear Doctor,*

Your letter was received last evening. On the day I received the first dose of *Lachnanthes* I went to see my typhoid pneumonia patient. I found her with *very red face* and her other symptoms very little abated from my visit the day before. I dissolved the lachnanthes in water and gave it to her immediately. On visiting her the *next day*, I found her *doing very well*. The *redness had left the face very soon after the medicine* was given and all the rest of her *pneumonia symptoms much better*, indeed *almost entirely removed*. She has continued to improve ever since. I saw her to-day again. *Her face got very red while I was there* but as I could not be certain it was not from excitement I thought best to let this day pass over without giving another dose of lachnanthes. She had a *hard, dry cough* which appeared to *proceed* altogether from the *larynx* and as the little expectoration was white I gave *pulsatilla* and left directions with her sister that if the redness of the face continued there tomorrow, to give the other dose of lachnanthes.

Her case was a *bad typhoid fever before pneumonia set in* and her father (Dr. Thomas-Homœopathist from Wilmington) considered her case altogether hopeless and left her uncles the impression he would never see her again alive. She is now however in a fair way of recovery. Her case has occasioned much talk in the village and neighborhood where she resides (7 miles from here). A number of cases in the same place have died under allopathic treatment. I handed the medicine over to Mr. Panhale last night.

Excuse haste

Yours truly

H. Duffield.

I am glad to hear you have recovered from your attack. What was it? I have had a number of fever cases which under allopathic treatment would have had typhoid, but it was cut short.

(The italicised lines were made by von Lippe himself). *von Lippe*
manuscript.

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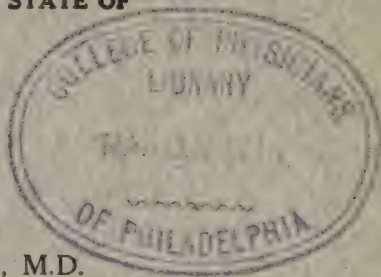
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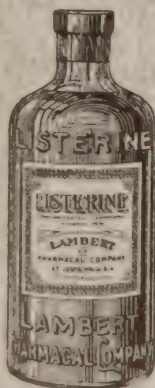
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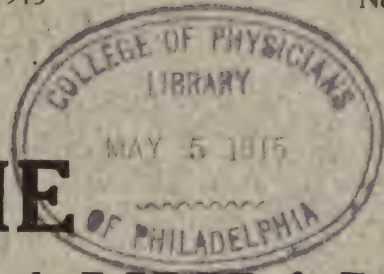


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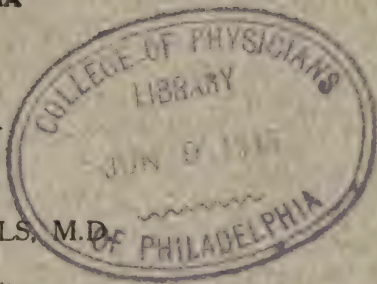
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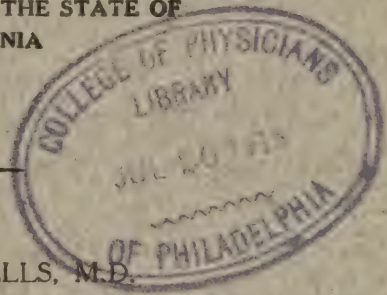
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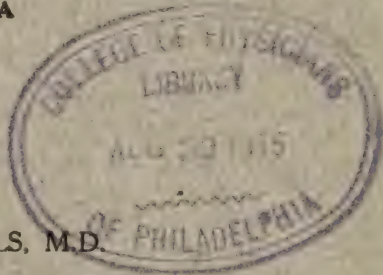
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